

T H E S I S

on

A PLAN OF PREPARATION FOR NEGRO TEACHERS OF
AGRICULTURE IN NORTH CAROLINA

Submitted to the

OREGON STATE AGRICULTURAL COLLEGE

In partial fulfillment of
the requirements for the
Degree of


MASTER OF SCIENCE

by

Cecil Lloyd Spellman

June 6, 1932

APPROVED:


Professor of Agricultural Education
In Charge of Major


Chairman of Committee on Graduate Study

.75 bind.

24 Oct. 1932

ACKNOWLEDGMENT

The writer wishes to express his sincere appreciation to Professor H. H. Gibson, Head of the Department of Agricultural Education, who has given generously of his time and advice in making this study a success.

Table of Contents

Page

Introduction

The problem.....	1
Teachers of agriculture constitute an important group of graduates from the Land Grant College and should be given special consideration in the curriculum.....	3
Scope of a complete curriculum for teachers of agriculture.....	7
Analysis of the training objectives in Vocational Education in Agriculture necessary for a better understanding of this thesis.....	13
Location of the problem and point of view.....	18

Section I

Determining the agricultural portion of a curric- ulum for the preparation of Negro teachers of agriculture in North Carolina.....	19
Determining the degree and kinds of agricultural training needed by teachers of agriculture in North Carolina.....	22
Evaluation of the agriculture of North Carolina.....	27
Determining what part of a curriculum should be devoted to technical agriculture in North Car- olina.....	47
Description of courses to be found in the agri-	

cultural portion of the present North Carolina curriculum.....	52
Set-up of a desirable curriculum for the North Carolina Land Grant College, with comments on the present North Carolina teacher training curriculum.....	55

Section II

Determining the content and organization of the professional portion of a curriculum for the preparation of Negro teachers of agriculture in North Carolina	
Scope and meaning of this section.....	86
Need for professional preparation by Negro teachers of agriculture in North Carolina.....	87
Portion of the curriculum to devote to professional work.....	88
Courses included in professional preparation.....	91
North Carolina Certification requirements.....	93
Evaluation of professional courses.....	96
Limiting the problem.....	99
Objectives and aims as determinants of content in the teacher training program.....	100
Set-up in North Carolina.....	102
A method of determining the kinds of training needed by teachers of agriculture.....	102

Analysis of the duty of the teacher of agriculture.....	106
Decisions that must be made by the teacher trainer in organizing the professional por- tion of the curriculum.....	111
Questionnaire sent to certain teacher trainers.....	114
Questionnaire results.....	119
Methods used in teaching certain jobs by seven teacher trainers.....	125
The observation and practice teaching course.....	127
The plan of observation and practice teaching now in use in North Carolina.....	129
Conclusion.....	135
Appendix.....	137
Bibliography.....	141

A PLAN OF PREPARATION FOR NEGRO TEACHERS OF
AGRICULTURE IN NORTH CAROLINA

T H E S I S

A PLAN OF PREPARATION FOR NEGRO TEACHERS OF
AGRICULTURE IN NORTH CAROLINA

Introduction

Determining The Agricultural And Professional Phases Of
A Curriculum In Agriculture For The Preparation
Of Negro Teachers of Agriculture
In North Carolina

The Problem:

Recognizing an increasing interest in curriculum organization in Land Grant Colleges, and particularly in the field of agriculture in recent years

The passage of the Congressional Act of 1862 which made agriculture a part of our higher education system created many problems for the Land Grant Colleges. The problems of most recent years have been centered around the reorganization of the curriculum in agriculture. Among the factors which have served to focus attention on the agricultural curriculum, the following are noteworthy:

1. Vocations in the field of agriculture are constantly increasing in number and complexity. The Oregon Agricultural College Bulletin 464, "Occupations for the Agriculturally Trained" (1930) lists 179 vocations in the field of agriculture. This vast number of occupational choices has led to an increasing demand for a multiplicity of courses in agricul-

al curricula.

2. Research and experimental activities are giving an increasing scope of new technical information.

This accumulation of data has made it mandatory that colleges make use of the newer and better material of subject matter. It has taken much of the knowledge of agriculture out of the field of hazarded guesses and theories and placed it in the field of substantiated facts.

3. In the last 8 to 10 years, boys who have graduated from departments of Smith Hughes High School agriculture have begun to enter the Land Grant Colleges. It is now estimated that from one third to one half of the boys taking agriculture in colleges are former Smith Hughes High School agriculture students. The presence of this group of boys in the college makes it necessary that the college curriculum be so revised and organized that they will not be forced to duplicate their former training in agriculture.

4. Colleges are realizing more fully that, if subject matter taught in the college is to be functional, it must be selected with the needs of the learner, based on the job which he will do, clearly in mind. It is an established fact that there is a much greater carry-over in those things taught which prove to be functional, than there is in those things taught as "ends within themselves". F. C. Burd of Kentucky says, "A course of study should be based on the needs of the pupils to be taught and on the specific requirements of the

occupation for which the instruction is to be given."* Since it is true that the content of the college curriculum is the most important medium thru which students are trained for their future jobs, it is of utmost importance that this curriculum be so revised, adjusted and organized as to be inclusive of the elemental knowledge and skills which these students will need for success in their jobs.

Teachers Of Agriculture Constitute An Important Group
Of Graduates From The Land Grant College And
Should Be Given Special Consideration
In The Curriculum

The graduates of the Land Grant College each year, are prepared to follow a variety of vocations. At present they choose vocations which for convenience, are designated as follows: Farming, Teaching, Research, Extension Work, Business Related to Farming, and Miscellaneous. These graduates of the Land Grant College fall into the listed vocational groups in percentages according to Table 1, page 3a.

According to this table, it is evident that teachers of agriculture constitute a large and important portion of the graduates of the Land Grant College. In regards to North Carolina alone, the table shows that 45% of the graduates enter the fields of teaching and extension work, which is a form of teaching. Furthermore, an additional 30% of the

*Monograph 6, Federal Board for Vocational Education. Pp 1.

Table 1

Pursuit of agricultural college graduates (19 States)

	% Farming	% Re- search	% Teach- ing	% in Exten- sion Work	% in Busi- ness Related to agr.	% Mis- cel- la- neous
Florida.....	8	12	32	10	12	26
Georgia.....	18	2	28	26	7	19
Indiana.....	35	0	*36	0	14	15
Kansas.....	50	0	*36	0	0	14
Maryland.....	30	0	21	9	18	22
Massachusetts..	21	7	12	3	16	41
Michigan.....	28	5	18	6	18	25
Minnesota.....	19	0	*54*	13	4	10
Mississippi....	19	4	17	14	0	46
Montana.....	24	8	23	5	15	25
Nevada.....	27	6	17	13	10	27
New Hampshire..	39	0	20	0	20	20
New Jersey.....	22	8	21	10	0	30
New York.....	34	0	*36	0	16	14
North Carolina	30	7	37	8	10	8
Pennsylvania .	29	7	18	15	0	31
Rhode Island..	30	6	30	4	0	30
Texas.....	32	5	18	4	24	17
Washington.....	31	0	31	5	13	20
Average	27.8	5.8	24.0	8.4	10.4	23.6

*Research, Teaching and Extension Work Combined

**Research and teaching combined

Wheeler: Determining the agricultural constants in a preparatory curriculum for High School Teachers of Agriculture in Georgia. Bul. 148, Page 4. Georgia State College of Agriculture, Athens, Ga.

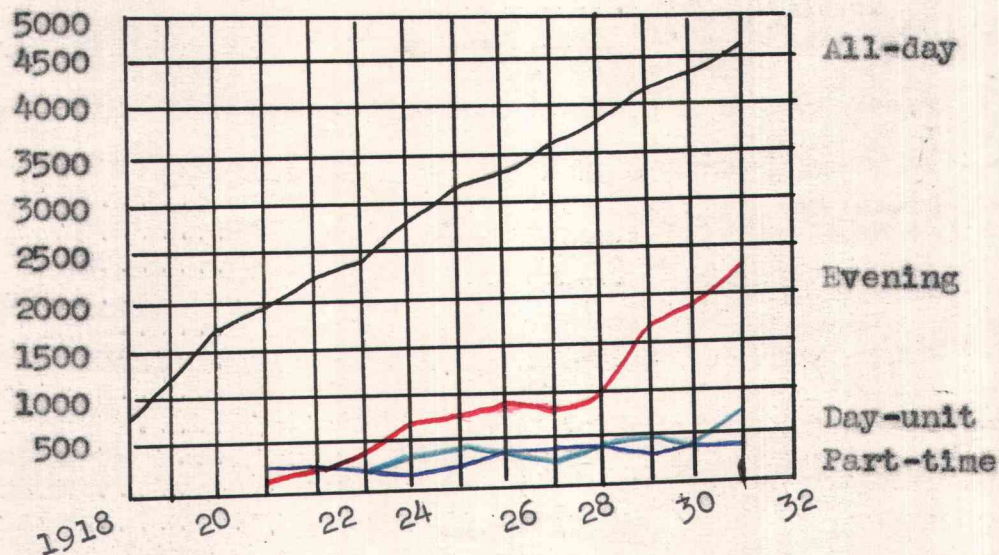
graduates enter actual farming as a vocation. This makes a total of 75% of the North Carolina graduates accounted for in farming or forms of teaching which are closely related to farming. In regards to the curriculum for the students who are the constituents of these groups, it is readily apparent that the kind of training needed by these students is very similar in many respects. That is, the students looking forward to teaching as a vocation, will need training similar to that of the students looking forward to farming as a vocation because, unless the teachers know the vocation of the farmer, they cannot be successful as teachers of farming.

It is highly important that the large group of students desiring to become teachers of agriculture be carefully and effectively trained, for there is a constant and increasing demand for prepared teachers of agriculture. This demand for agricultural teachers is shown in the following table.

Table 2. Number of agricultural teachers in United States 1918 to 1931.

This table is taken from the 15th Annual Report of the Federal Board for Vocational Education of 1931.

Table 2



The line in this table indicating "all-day" teachers is a good criterion for judging the number of teachers of agriculture, since almost invariably the teacher of agriculture will have all-day classes while the teacher might not have one or more of the other forms of work.

The table shows a decided and constant increase in the number of teachers of agriculture since the inception of secondary agriculture teaching in 1918, after the passage of the Smith Hughes Law (1917). The increase has been from about 800 in 1918 to 4,600, roughly, in 1931; this is an average yearly increase of about 271 teachers.

It is the duty of the Land Grant Colleges to prepare an-

nually, enough teachers to make the necessary replacements in this small army of teachers in service, and also to supply the 271 new teachers required. It is therefore, with the preparation of the groups of students being prepared for these purposes, that this thesis is primarily interested.

When these students are properly prepared they will find employment as teachers in various secondary schools of the state, and work under provisions of the Smith Hughes Law. This law has, among other stipulations, the following requirements which teachers should strive to meet: training must be of less than college grade; to fit for useful employment persons more than 14 years old who are able to profit by the training. Such persons must be in, or expect to enter the vocation of farming. The instruction is to be provided for young or old people, whether regularly in school or not. It may be provided in the following types of classes: all-day, day-unit, part-time or evening classes as the group in question indicates.

In these few statements, the future job of the students under consideration, is clearly outlined, briefly stated, it is to teach present and prospective farmers for the duties of farming. Such a job requires a wealth of training for the student before he becomes a teacher. The kinds of training which the student will need are those which will give him the proper skills and abilities in both technical and professional phases of the teaching job.

Scope Of A Complete Curriculum For Teachers Of Agriculture

In order that the content of a curriculum may be scientifically selected, it is necessary that the teaching job must be carefully studied in order that the problems in the job may be discovered. On a basis of the discovered problems, the curriculum content which will most nearly insure successful handling of these problems, can be employed. Such a study by Eaton, into the problems of the teaching job has indicated that the teacher of agriculture stands in need of a variety of different kinds of knowledge. This needed knowledge should be the essence of the content of the curriculum; and all other information, except that which has a real vital bearing upon a student's abilities in handling the anticipated problems of his teaching, should be excluded. Eaton's analysis of the agriculture teacher's job indicates the need of knowledge in five different types of studies as follows:

1. Studies in agriculture:

Special studies in Plant production

Special studies in animal production

Special studies in farm management

Special studies of mechanic control processes

Special studies in conservation and marketing

2. Studies in the scientific implications of agriculture:

Chemistry in relation to agriculture and everyday life

Physics with special emphasis upon the principles of mechanics and electricity

Biology of the functional type developing the principles of ontogeny and phylogeny. Botany taught from the same points of view may be a substitute

The physiology of plants and animals. A comparative functional study. Plant physiology with emphasis upon types of diseases of importance in the state

Economic entomology with particular reference to insect control problems in the state.

Bacteriology with particular reference to problems of sanitation in the home and on the farm

Meteorology, a study of climatic conditions in the state

Special and advanced studies for students who expect to teach in the high school as an additional duty:

Inorganic chemistry and qualitative analysis

Organic chemistry

Advanced physics

Botany and Zoology

Nature study

Astronomy

Studies in the social implications of agricultural education:

Sociology

Type problems of rural communities

Economics

English

Agricultural journalism

Public speaking and parliamentary procedure

4. Studies of the problems of the teacher of agriculture:

Making the course of study

The teaching process in the job of the teacher of
agriculture

Problems of the rural school principal

5. Studies in the scientific implications of teaching
problems:

Educational psychology of the learning process*

This classification, by Eaton, of the materials of a complete curriculum, into its parts is very inclusive. All these five parts of the curriculum are worthy of much study, however, this thesis cannot embrace them all. For the purposes of this thesis, parts 1 and 4 of the above grouping will suffice. These parts which will be considered in this thesis are; studies in the technical agriculture, and studies of the problems of teaching agriculture. The parts will embrace respectively, a consideration of the technical agricultural needs of the teacher of agriculture, and the professional needs of the teacher of agriculture.

This limitation of the problem is necessary for two im-

*Eaton, Federal Board for Voc. Education. Bul. 90. Pp.13.

portant reasons; first, the time element in which this thesis is to be finished is too short for efficient handling of the completed problem. Also, the available materials for studying the completed problem, are not adequate.

The second reason for thus limiting the problem is a special, active interest in these aspects of the problem from point of view of a teacher trainer in a Land Grant College. Upon the shoulders of the teacher trainer will rest responsibilities in special regards to the studies in technical agriculture and to the studies in professional courses which students take in college. In the former responsibility the teacher trainer must see that the student gets the skills and abilities needed by a successful farmer; and in the latter responsibility, he must see that the student gets the skills and abilities needed by a successful teacher. This gives the teacher trainer a dual responsibility which forms the basis of the two major problems of this thesis. Because of the scope of these problems, they can be treated only in a limited way. Thorough handling of either or both these problems would involve first hand field studies, reports, surveys and other unavailable data.

At some risk of repetition at this point, it is necessary to repeat that while the teacher of agriculture is not a farmer, in a large degree, his training needs in agriculture are needs very similar to the needs of a successful farmer. It is in this connection that the teacher trainer

finds his great responsibility in seeing that this necessary technical training is provided. Of course it is not the duty of the teacher trainer to select and administer the content of these courses, but it is his duty to help determine the content of technical courses made available to students taking teacher training. This is done by conferences with the staff of the departments in which worthy technical courses are taught. The teacher trainer may suggest desirable course content and desirable changes in the organization and content of courses given. In cooperation with the technical staff, the teacher trainer may evaluate the agriculture of the state to scientifically determine the elements of the state's agriculture constant enough to warrant incorporation into the technical preparation of the whole group of students taking teacher training work.

It is necessary that the teacher trainer carry out this cooperative work because at present teacher training is not such that within this department, all the necessary courses needed by the students preparing to teach, are controlled and taught. All the technical information which prospective teachers receive, comes from a variety of other departments. These departments are not as interested in other groups of students as they are in the particular group majoring in the field of the department; further, the department is likely to be more interested in the subject matter of the department than it is in functional value of the information as a

part of the equipment of a prospective teacher. For these reasons, if the teacher trainer's group is to get aught out of such technical courses, it is very necessary for the teacher trainer to cooperate with the departments supplying the particular courses to the extent that the department will be willing to make necessary concessions and readjustments.

It is most probable that the teacher trainer will be directly responsible for the professional training of the students preparing to teach, especially is this true of that portion of the curriculum which deals with the Special Methods and Observation and Practice Teaching Courses. His duties here will be somewhat more individualistic, rather than cooperative, as in the case of the technical portion of the curriculum. He will cooperate with the staff in charge of the general professional courses as Education and Psychology, but when it comes to the Special Methods and Observation and Practice Teaching Courses, he will determine content, organize and actually teach or supervise the courses.

In whatever light the teacher trainer is viewed, his duties are heavy with organizing responsibilities, But, organization cannot be stressed too much. The success of the fundamental organization is shown in the training of the students. Eaton says the following about organization:

"....Too much stress cannot be placed upon the importance of organizing properly and adequately for the training of vocational teachers. The success of any program of education

and particularly vocational education, will in the last analysis, depend very largely upon the teachers, and the effectiveness of the teacher will be measured in the terms of his training and experience. No amount of supervision, invaluable as it may be, can take the place of adequate preparation of the teacher..."*

Analysis Of The Training Objectives in Vocational
Education In Agriculture Necessary For A
Better Understanding Of This Thesis

The Federal Board for Vocational Education, in Bulletin 153, page 1, says: "The primary aim of vocational education in agriculture is: To train present and prospective farmers for proficiency in farming....."

.....This is necessarily a general and comprehensive aim which defines our field of service in terms of: (1) The recipients of such education, 'present and prospective farmers' and (2) the general nature, quality and content of the work 'to train * * * for proficiency in farming'....."

If this is the aim of the Federal Board for Vocational Education, then unquestionably, the aim of the Land Grant Colleges must be to equip future teachers to sustain this aim of the Federal Board.

The Federal Board for Vocational Education suggests that this aim be realized thru 12 Contributory Objectives

*Eaton, Federal Board for Voc. Education. Bul. 90, Pp 1.

given below and evaluated in terms of Negro farmers.

1. To produce agricultural products efficiently.

Greater education is generally needed by Negro farmers in North Carolina concerning the relation between costs, cost reduction and profits in agriculture. They are not yet to the place of recognizing factors in efficiency in such things as proper placement of crops, combinations of fields for convenient handling, use of larger and more powerful machinery and the like.

2. To market agricultural products economically.

Negro farmers in North Carolina are generally individualists in the matter of marketing products. Much can be done for them in changing them to cooperation, standardization and grading and similar types of services in marketing.

3. To select and purchase suitable farm equipment and supplies.

Under the present system where tenancy is more general than ownership among the Negro farmers in North Carolina, and where the tenants' holdings are rather small, the emphasis first must be placed on acquiring larger holdings, whether as tenants or owners in order that more suitable farm equipment and supplies can be afforded.

4. To cooperate intelligently in economic activities.

When the Negro farmers are educated to the extent of uniting with cooperatives and other farmer-owned enterprises, it will become possible for them to participate in economic activi-

ties. At present, they have access to no such activities.

5. To manage the farm business effectively.

This objective grows in importance as more Negro farmers acquire farms. In 1930 in North Carolina, there were only 13,198 Negro farmers owning farms out of a grand total of 115,765 full farm owners in the state. Other Negro farmers (part owners, cash tenants, croppers, other tenants, managers) amounted to 120,814 out of a total of 301,558 farmers falling in this classification.* In the case of all these groups of Negro farmers, except the group of full owners, it is highly probable that the landlords map out the policy of the farms on which they are. This course would preclude them from developing and practicing managerial abilities.

6. To establish and maintain a satisfactory farm home.

This objective has much reflection in the discussion of the previous objective. Where there is no ownership, there can be but little home building. The most favorable thing that could be done in this connection would be the effecting of a system under which the expected tenure of the tenant would be longer than is generally the case. When tenants move often, the landlords do not have a chance to properly evaluate them, nor do they remain long enough to begin to feel that any place is home to them.

7. To perform appropriate economical farm-mechanics activities.

*15th Census of U. S., Agriculture of North Carolina.

Again, this is an impossible objective until the general economic status of the group as a whole is raised in the ownership of the articles of farm mechanics.

8. To participate in worthy rural civic and social activities.

This objective, when realized would certainly yield a fuller and richer social life than is now the case among Negro farm families.

9. To use scientific knowledge and procedure in a farming occupation (as contrasted with technical knowledge)

This objective is worthy of consideration and is within the realms of possibility thru evening classes to which both the farmers and farm women respond.

10. To exercise constructive leadership and to recognize and follow worthy leadership.

It is readily observable that Negro farmers are following constantly more of their own leadership. However, the writer has noted a tendency in the group to be slow to respond to leadership from outside the community, be it from teacher, preacher, or whatever source. Probably the delay is due to the fact that the group is evaluating the leader before pledging allegiance to him.

11. To grow vocationally.

This objective could do much to change the attitude of the group toward the vocation. In some cases, especially with the marginal farmers, it appears that they are in, at least,

a mental rut which could be overcome with a different outlook upon the possibilities within their vocation.

12. To become established successfully in farming.

In this objective, the emphasis should be put on the word "established" to the extent that each farmer would try to find some place where he is willing to send down roots and call it home, whether as a tenant or owner.

For the realization of the aim and objectives of this Vocational Education in Agriculture, the Federal Board depends upon the teachers of agriculture. The success of these teachers, however, will be no more marked than the success of the preparation received by them while in their college. When it is borne in mind that the college teacher trainer is directly in charge of this teacher preparation, then the tremendous weight of his responsibility becomes apparent. This great responsibility will bear restating, it is: (1) providing the necessary kinds of experiences and courses that will cause the student to gain the constant skills and abilities needed by the Negro farmers in North Carolina, and (2) providing the necessary experiences and courses that will cause the student to gain the skills and abilities needed by a successful teacher in North Carolina.

This dual responsibility of the teacher trainer gives the necessary basis for the two major problems of this thesis: (1) Determining agricultural portion of a curriculum for

the preparation of Negro teachers of agriculture in North Carolina, and (2) Determining the professional preparation for Negro teachers of agriculture in North Carolina. These phases of the problem are taken up in sections 1 and 2 respectively of this thesis.

Location of Problem and Point of View

This problem of "A Plan of Preparation for Negro Teachers of Agriculture" is confined to the state of North Carolina. It applies specifically to the Agricultural and Technical College located at Greensboro. This is the college in North Carolina recognized by the State Board of Education as the Land Grant College for training of Negroes.

The point of view in writing this thesis will be that of the teacher trainer in Agricultural Education.

T H E S I SA PLAN OF PREPARATION FOR NEGRO TEACHERS OF
AGRICULTURE IN NORTH CAROLINA

Section I

Determining The Agricultural Portion Of A Curriculum
For The Preparation Of Negro Teachers Of
Agriculture In North Carolina

Defining and Limiting the Problem

A scientific determination of the agricultural portion of a curriculum for the preparation of teachers of agriculture in North Carolina involves, among other things, an evaluation of the agriculture of the state. Such an evaluation of the agriculture of the state would yield the gross units of the state's agriculture -- the major types of farming found represented in the State. Further analysis reveals that these gross units of the state's agriculture are combinations of smaller units, or crop and animal enterprises such as: tobacco, cotton, hogs, poultry, potatoes. Any combination of these smaller units, or crop and animal enterprises makes a type of farming. The enterprises going into a type of farming may be classified as major, minor, and contributory enterprises. The major enterprises are those enterprises producing most of the farm income and giving the

name to the type of farming; minor enterprises are of less importance to the farm than the major enterprises, yet they contribute some of the farm income; contributory enterprises facilitate the major or minor enterprises in some way, but add little if anything to the farm income. An example will help clarify these distinctions: on a farm having a dairy herd, a flock of hogs and some acreages of corn and alfalfa, the dairy herd would be the key or major enterprise, bringing to the farm most of its income; the hogs would be the minor enterprise, bringing to the farm some of its income, however, less than that brought in by the dairy here; the crops of corn and alfalfa would be contributory enterprises, facilitating the dairy and hog enterprises, yet actually bringing to the farm none of its income.

If our analysis of the agriculture of the state were carried to completion, one should be led into a consideration of the technical knowledge, skills and farm practices important in the conduct of the enterprises and types of farming in the state. Such a procedure would give a real scientific insight into the agricultural training needs of future teachers of agriculture. These training needs of future teachers would serve as the actual basis for the determination of the curriculum content for the preparation of these teachers. However, several factors combine to make it impossible to handle these needed skills, abilities and usual practices of farmers in the conduct of these enterprises

and types of farming. Among the prohibitive factors, the following stand out most prominently: (1) to go into a consideration of the needed skills, abilities and usual practices of the farmers would make the scope of the problem too large for efficient handling, (2) the distance from the field under consideration makes it impossible to get direct contacts with the Land Grant College under consideration, the farmers, or other agencies and individuals that could supply helpful information, and (3) pertinent data such as field studies, surveys, research findings and the like are unavailable.

Since these factors make it impossible to consider the needed skills, abilities and usual practices of the farmers, a different way of handling the problem must be found. The best approach to the solution of the problem now apparent is by way of an evaluation of the enterprises in which these training needs have their origin. In making such an evaluation of the agriculture of the state as a basis for determining the curriculum content, the writer makes use of experience as a teacher of vocational agriculture in North Carolina, printed data available, results of a catalog study of the curricula of six Land Grant Colleges in the states of North Carolina, South Carolina and Virginia, census materials and United States Department of Agriculture Yearbook figures and statistics which have a bearing on the solution of the problem.

Determination Of The Degree and Kinds of Agricultural
Training Needed By The Teacher Of
Agriculture In North Carolina

The degree and kinds of training needed by the teacher of agriculture are indicated by the purpose of the Smith Hughes Agricultural Act. The purpose of the act is to prepare present and prospective farmers for proficiency in farming. If the teacher of agriculture is to be able to carry thru this purpose of the act, he must himself have an amount of training comparable to that which would be needed by a successful farmer in the community in which the teacher is located. Therefore, the great problem in determining the content of the agricultural portion of the curriculum for teachers of agriculture is that of determining the elements of subject matter which will have the greatest probable value in developing in the student, the farming skills and abilities which may later be needed in carrying out his duties as a teacher of agriculture in any county of North Carolina.

The problem is further complicated by the fact that it is not known beforehand, while the student is in college, to what section of the state he will be sent as teacher of agriculture. If this could be known in advance, the curriculum could be more easily and satisfactorily adjusted. Since this cannot be told in advance, the best thing that can be

done for all concerned in the teacher training course, will be to determine those elements of agricultural subject matter which have constant value in any portion of the state.

On the basis of the two factors -- probability and constancy, a satisfactory curriculum can be set up. This former factor has value because it serves to call attention to the consideration of the probable section of the state to which prospective teachers may be sent. On a basis of the knowledge of the probable location of prospective teachers, a more specific type of training can be arranged. Such specific training would be impossible if this were not known.

The latter mentioned factor has value because it will establish the weighted rank of the various agricultural enterprises of the state and give a scientific basis on which relative emphasis for the parts of the curriculum can be established. This will result in a better correlation of the parts of the curriculum than would be possible under a system where the emphasis is given the different parts of the curriculum on a basis of some person's opinion.

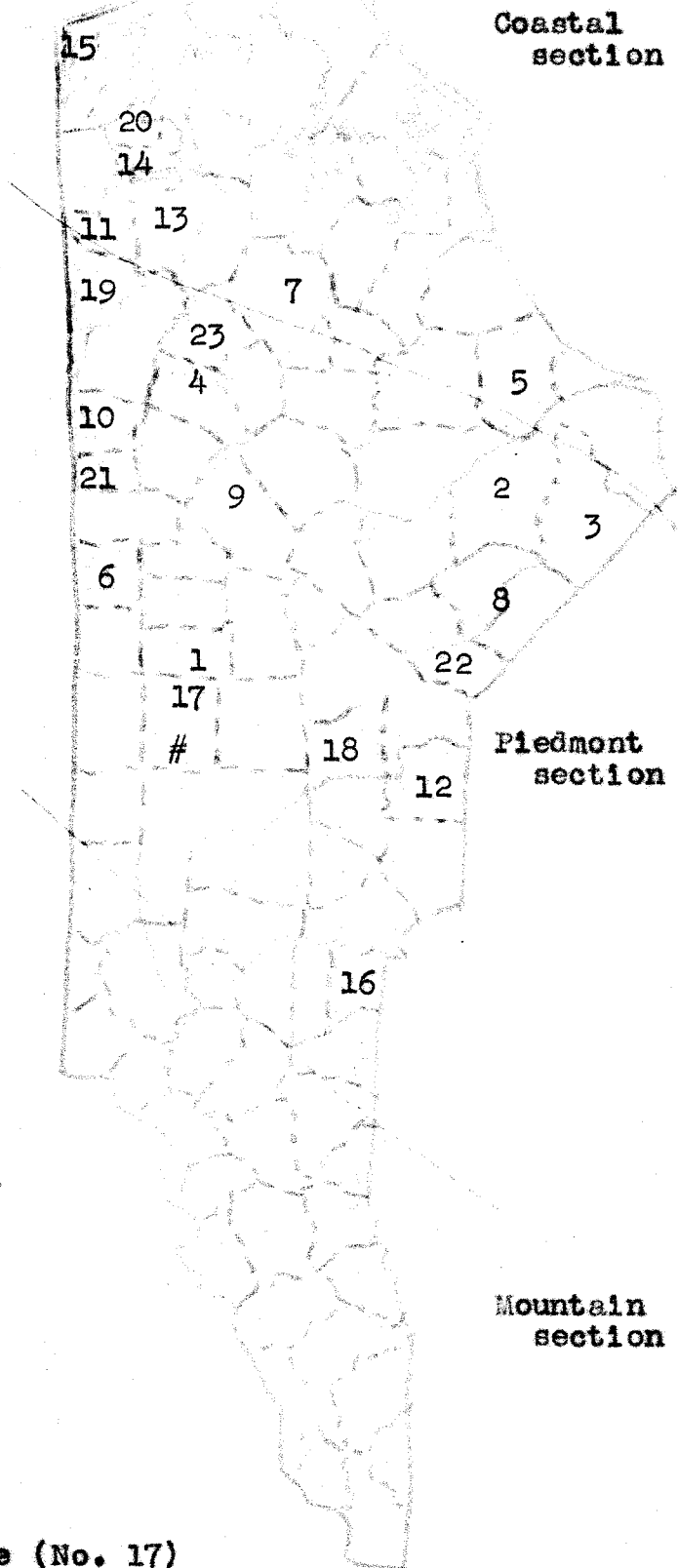
The map on page 24 showing the geographical divisions of North Carolina and the distribution, by counties, of teachers of agriculture, illustrates the first factor.

A brief word concerning the geography and types of farming of the state is in place at the outset. North Carolina is divided into three main divisions: Coastal Section, Piedmont Section, Mountain Section. No abrupt physiographical features

Geographical divisions of
North Carolina, and
Distribution of teachers

- 1 Alamance
- 2 Bladen
- 3 Columbus
- 4 Nash
- 5 Pender
- 6 Person
- 7 Pitt
- 8 Robeson
- 9 Wake
- 10 Warren
- 11 Hertford
- 12 Anson
- 13 Bertie
- 14 Chowan
- 15 Currituck
- 16 Gaston
- 17 Guilford
- 18 Montgomery
- 19 Northhampton
- 20 Perquimans
- 21 Vance
- 22 Scotland
- 23 Edgecomb

State Land Grant College (No. 17)



divide one section from the others. One merges imperceptibly into the other. The Coastal Section is characterized by flat sandy plains and many inland waterways. Since it is sandy, the soil warms early in the spring and makes the section well adapted to the growing of commercial potato crops. Potatoes, it should be said, make one of the important types of farming of the section. Cotton makes the other important type of farming in the section.

The Piedmont Section of the state is characterized principally by rolling red clay foothills to the Smoky Mountain Range of the western section of the state. Some of the Piedmont Section, however, is sandy soil. In this sandy soil of the Piedmont Section, much of the Light Blue Cured Tobacco of North Carolina is produced. Tobacco, then, is the key or major enterprise in the type of farming generally followed in the Piedmont Section. Cotton also is of importance in the Piedmont Section. It is as important here as in the Coastal Section.

The character of the Mountain Section is indicated by the name of the section. Cotton and Dark Burley Tobacco form the major types of crop farming in this section. Most of the cattle and sheep raising of the state takes place in the Mountain Section.

This brief review of the geography and types of farming in North Carolina gives an insight into two things important in determining curriculum content: (1) the character of the

regions and soil types of the state, and (2) major types of farming in the state.

The map given shows the distribution by counties of the agricultural teachers in the geographical divisions of the state. It is noted on the map that most of the teachers of agriculture are located in the Piedmont Section. This is probably true because the Land Grant College, the headquarters for the Smith Hughes work, is located in this section of the state. It is also true that because of shorter distances involved in traveling, the State Supervisor is able to work up more departments of Smith Hughes Agriculture in this section than he is able to work up in more distant sections.

The Coastal Section is the only other section of the state in which teachers of agriculture are located. It appears that the Smith Hughes work is spreading from the Piedmont Section eastward into the Coastal Section. No teacher is located in the Mountain Section. Within the knowledge of the writer, no teacher has ever been located in that section. From this point of view, if it may be assumed that the future developments in the state Smith Hughes work will be in the direction of the developments of the previous fourteen years, it becomes evident that the agricultural training given to prospective teachers of agriculture should emphasize the agriculture of the Piedmont Section; also that of the Coastal Section, as the section which is rapidly developing in importance from the point of view of

Smith Hughes Agriculture. Previous developments indicate that these are the sections in which future agriculture teachers are likely to locate.

The agriculture of the Mountain Section under such a scheme would merit relatively less consideration in the curriculum. In the preparation of the students, knowledge of this Mountain Section would tend to prove more cultural than functional.

The final factor of importance in determining the agricultural portion of the curriculum for teachers of agriculture is the evaluation of the agriculture of the state.

Evaluation Of The Agriculture Of North Carolina

The term evaluation connotes a careful appraisal, or a determination of values. When evaluation is regarded in this manner it may rightly be made the basis for the determination of the component parts of a curriculum in agriculture for the preparation of teachers of agriculture. The relative importance of the enterprises established by the evaluation is a good index as to the amount of emphasis that the different enterprises should have in the curriculum.

An evaluation to carry out this function can be made by the application of certain constant factors to the enterprises making up the agriculture of the state. When the factors for the evaluation are properly chosen, they will have

measuring value on any enterprise in any part of the state; further, the sum of these factors will give unquestioned weighted values to the enterprises to which they are applied.

From these points of view, the following evaluating factors are selected:

1. National Importance.

This factor takes into consideration the importance of an enterprise of the state in the light of the position of the enterprise in National Agriculture. This means that the North Carolina enterprises like cotton and tobacco, which contribute prominently to the agriculture of the nation, should be considered relatively more favorably and emphasized more highly in the agricultural portion of the curriculum than enterprises like sheep or sorghum, which have relatively no effect on this phase of National Agriculture.

2. Regional Importance.

This factor refers to the constancy of the enterprise in other neighboring states, particularly in the South Atlantic Region of the United States; for it is in this region that practically all of the prospective agriculture teachers will be located. In order for the preparation of these prospective teachers to be functional in the territory in which they may go, the preparation must take into consideration the agriculture, not only of the state in which they are trained, but also of the whole region in which they may locate. This means that the tendency must be to decide the importance of

the enterprise more from point of view of the region than from the point of view of the state alone. This holds true because enterprises of regional importance, may, in the course of time, become of state importance too.

3. Potential Importance.

This factor is expected to indicate the trends in the agriculture of the state, taking into consideration the rising or falling importance of the enterprises. In terms of the curriculum, it means that the emphasis on an enterprise in the curriculum would be increased or decreased in harmony with the fluctuating importance of the enterprise itself. This would make it impossible to keep an enterprise highly emphasized in a curriculum when the enterprise actually was declining in importance. Also, it would make it hard to leave a developing enterprise out of the curriculum for any great length of time.

4. State Importance.

This factor concerns itself about the relative importance of the enterprise to the state. The factor has practically the same meaning as the factor on Regional Importance, except that in this case, the scope of the territory concerned is limited to the state of North Carolina alone.

State Importance is further clarified by the following subfactors:

5. Frequency of occurrence on farms of the state.

The importance of an enterprise can be measured by the

number of farms in the state which produce the enterprise.

6. Ease of getting started in the business.

The facility or difficulty attendant upon entrance into an enterprise will effect the number of farmers producing the enterprise. This means then, that from point of view of the average farmer, the less difficulty there is in getting into the enterprise, the better it is for the farmer.

7. Adaptability.

This factor covers much in a general way. However, it should be specifically understood to include such factors as: harmony with the enterprises and types of farming now in the state. It should lend itself to agricultural project work. It should have much information available to the farmers concerning it. It should contain much in the form of skills and practices that will carry over into other similar enterprises. It should present favorable teaching situations. It should hold some ownership possibilities and should lend itself to changing agricultural conditions in the state.

8. Markets for the enterprise.

This factor indicates that the value of an enterprise is conditioned by the opportunities for selling the product of the enterprise. Location of adequate markets within the state, and satisfactory transportation facilities

are decided advantages in favor of any enterprise.

9. Economic value of the enterprise in the state.

This factor refers to the value of the enterprise in dollars.

10. Acreage of the enterprise in the state.

11. Cost of starting the enterprise on the farms.

This factor includes the costs which would be incurred by a farmer who is not producing the enterprise, in case he should decide to establish himself in it. Obviously, an enterprise having high financial requirements either in capital or equipment, at the time the farmer enters it, would tend to keep the farmer on the outside. Those enterprises requiring least financial outlay are relatively more important to the farmer.

12. Information available on the enterprise.

This factor includes published data pertaining to the enterprise such as: experimental and research data, cultural data, market information, surveys and outlook reports available to the farmers.

The enterprises to be evaluated for consideration as material for the agricultural portion of the curriculum for the preparation of prospective teachers of agriculture are the most important enterprises listed in the Farm Forecaster, North Carolina's official statistical bulletin. In the evaluation, statistics for the years 1925 and 1930 are used. By using the figures for these

years, "trends" in the agriculture of North Carolina, are brought to light. These trends in agriculture, which must be considered in the agricultural portion of the curriculum for the preparation of teachers of agriculture are shown in the following tables:

	Page
Frequency of major crop and animal enterprises	
in N. C. for state and counties for 1925 and 1930.....	34
Percentage frequency of crop and animal enterprises	
in N. C. for state and counties for 1925 and 1930.....	35
Acreage, farm value and percent of total farm value	
of major crop enterprises in N. C. 1925.....	36
Acreage, farm value and percent of total farm value	
of major crop enterprises in N. C. 1930.....	37
Number of head of farm animals, farm value and percent	
of farm value for 1925.....	38
Number of head of farm animals, farm value and percent	
of farm value for 1930.....	38
Comparison of farm values of animal enterprises in N. C.	
for 1925 and 1930.....	39
Comparison of farm values of crop enterprises in N. C.	
for 1925 and 1930.....	40

In order to show a comparison of agriculture in North

Carolina and the country as a whole, the following statistics of the enterprises in United States are given. The enterprises covered are comparable to those being evaluated for North Carolina

	Page
U. S. acreage and farm value of the major crop and animal enterprises in 1925.....	41
U. S. acreage and farm value of the major crop and animal enterprises in 1930.....	42
Comparison of scope of major crop and animal enterprises in U. S. for 1925 and 1930.....	43
Comparison of farm value of major crop and animal enterprises in U. S. 1925 and 1930.....	44

These statistics and the foregoing discussions give the necessary basis for the evaluation and rating of the agricultural enterprises of North Carolina. Such an evaluation, making use of these foregoing facts is graphically expressed in the chart appearing on page 45.

Frequency of the major crop and animal enterprises in
North Carolina.

Enterprise	Farms Report- ing		Counties re- porting	
	1925	1930	1925	1930
Corn	245,431	248,309	100	100
Wheat	47,810	49,080	90	*77
Oats, rye, barley, buckwheat	71,794	69,534	99	100
Sorghum	14,691	18,136	93	*86
Cotton	175,737	151,664	84	80
Tobacco	94,274	117,222	89	81
Potatoes	157,157	263,356	100	100
Field beans, peas, soybeans, cowpeas, peanuts	90,040	85,356	100	100
Wild and tame hay	84,067	111,486	100	100
Commercial truck crops	24,998		*92	100
Apples, peaches, pears, grapes, pecans			100	100
Horses and mules	222,740	213,035	100	100
Cattle	143,581	161,423	100	100
Sheep	5,308	6,268	*75	#67
Hogs	172,154	139,381	100	100
Poultry	245,372	241,475	100	100
Total farms in state	283,482	279,708		

*10 or less reports from remaining counties in state

#Less than 250 head in remaining counties

Figures from U. S. Census for 1930 and Agr. Census of 1925.

Percentage frequency of the major crop and animal enterprises in North Carolina

Enterprise	Percent of Farms Reporting		Percent of counties reporting	
	1925	1930	1925	1930
Corn	86.5	85.1	100	100
Wheat	16.8	17.5	90	77
Oats, rye, barley buckwheat	23.5	24.8	99	100
Sorghum	5.1	6.4	93	86
Cotton	61.1	54.2	84	80
Tobacco	33.2	41.0	89	81
Field beans, peas, soybeans, cowpeas, peanuts	31.7	30.8	100	100
Potatoes	55.4	94.1	100	100
Wild and tame hay	29.5	39.8	100	100
Commercial truck crops	8.8		92	100
Apples, peaches, pears, grapes, pecans			100	100
Horses and mules	78.5	76.1	100	100
Cattle	50.6	57.7	100	100
Sheep	1.8	2.2	75	67
Hogs	60.7	49.8	100	100
Poultry	86.5	86.3	100	100

Total farms in the state: 1925 1930
 283,482 279,708

Figures in this table are from the preceeding page.

Acreage, farm value and percent of total farm value of the major crop enterprises in North Carolina in 1925.*

	Acreage	Value	Percent of value
Corn and corn products	6,900,000	\$119,573,000	29.8
Wheat	406,000	7,637,000	1.9
Small grains: oats, rye, barley, buckwheat	358,000	5,600,000	1.3
Sorghum	47,000	2,206,000	.5
Cotton and cottonseed	4,034,000	84,089,000	20.9
Tobacco	547,000	103,802,000	25.8
All potatoes	160,000	19,335,000	4.8
Wild and tame hay	2,284,000	33,948,000	8.4
Field beans and peas, soybeans, cowpeas, peanuts	656,000	11,882,000	2.9
All fruit: apples, peaches, pears, pecans, grapes (bu.)	11,910,000	7,920,000	1.6
Com. Truck Crops: all beans, lettuce, cabbage, cantaloups, peppers, cucumbers, watermelons, beets, green peas, carrots, tomatoes, spinach, strawberries, sweet corn	<u>26,390</u>	<u>5,326,000</u>	<u>1.0</u>
Totals	-----	\$401,118,000	98.9

*Figures from the Farm Forecaster, North Carolina's official statistical bulletin for 1927.

Acreage, farm value and percent of total farm value of the major crop enterprises in North Carolina in 1930.*

	Acreage	Value	Percent of value
Corn and corn products	6,493,000	\$112,117,000	34.0
Wheat	343,000	4,674,000	1.4
Small grains: oats, rye, barley, buckwheat	426,000	6,845,000	2.0
Sorghum	58,000	3,022,000	0.9
Cotton and Cottonseed	1,631,000	39,252,000	12.5
Tobacco	807,000	75,920,000	23.0
All potatoes	219,250	24,443,000	7.4
Wild and tame hay	2,499,000	37,756,000	11.5
Field beans and peas, soybeans, cowpeas, peanuts	503,500	10,089,000	3.0
All fruit: apples, peaches, pears, pecans, grapes (bu.)	10,830,000	9,221,000	2.8
Commercial truck: all beans, lettuce, cabbage, cantaloups, peppers, cucumbers, watermelons, beets, green peas, carrots, tomatoes, spinach, strawberries, sweet corn	<u>39,690</u>	<u>2,642,000</u>	<u>0.6</u>
Totals	-----	\$326,191,000	99.1

*Figures from the Farm Forecaster, North Carolina's official statistical bulletin for 1931.

Number of head, farm value and percent of total farm value of Major animal enterprises in North Carolina in 1925.*

	Head	Value	Percent of value
Horses and mules	409,000	\$46,130,000	57.4
All cattle	545,000	16,232,000	20.1
Sheep	67,000	419,000	0.5
Hogs	894,000	10,728,000	13.3
Poultry	<u>8,558,000</u>	<u>7,017,000</u>	<u>8.4</u>
Totals	-----	\$80,526,000	99.7

Number of head, farm value and percent of total farm value of Major animal enterprises in North Carolina in 1930.**

	Head	Value	Percent of value
Horses and mules	365,000	\$40,309,000	49.0
All Cattle	521,000	24,529,200	29.8
Sheep	88,000	765,000	0.9
Hogs	803,000	9,395,100	11.4
Poultry	<u>8,769,000</u>	<u>7,190,580</u>	<u>8.7</u>
Totals	-----	\$82,250,880	99.8

*Figures from the Farm Forecaster, North Carolina's official statistical bulletin for 1927

**Figures from U. S. D. A. Yearbook for 1930.

Comparison of total farm values of major animal enterprises
in North Carolina for 1925 and 1930

Legend: Scale: 1/16" equals 1%

1925 ———

1930 ———

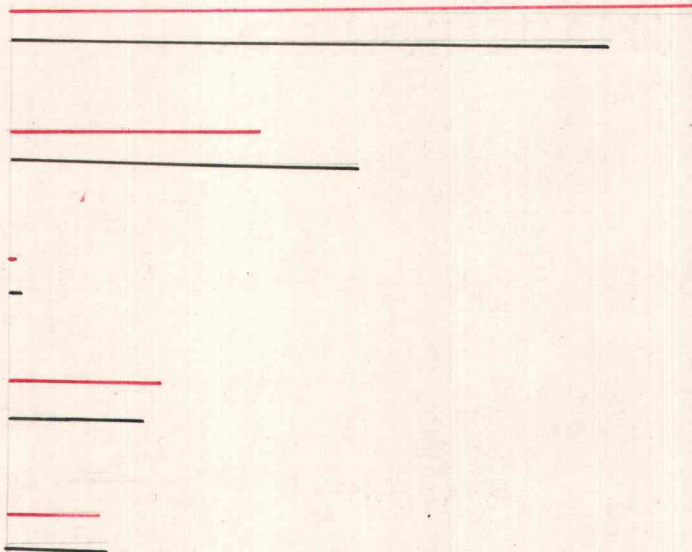
Horses and mules

All cattle

Sheep

Hogs

Poultry

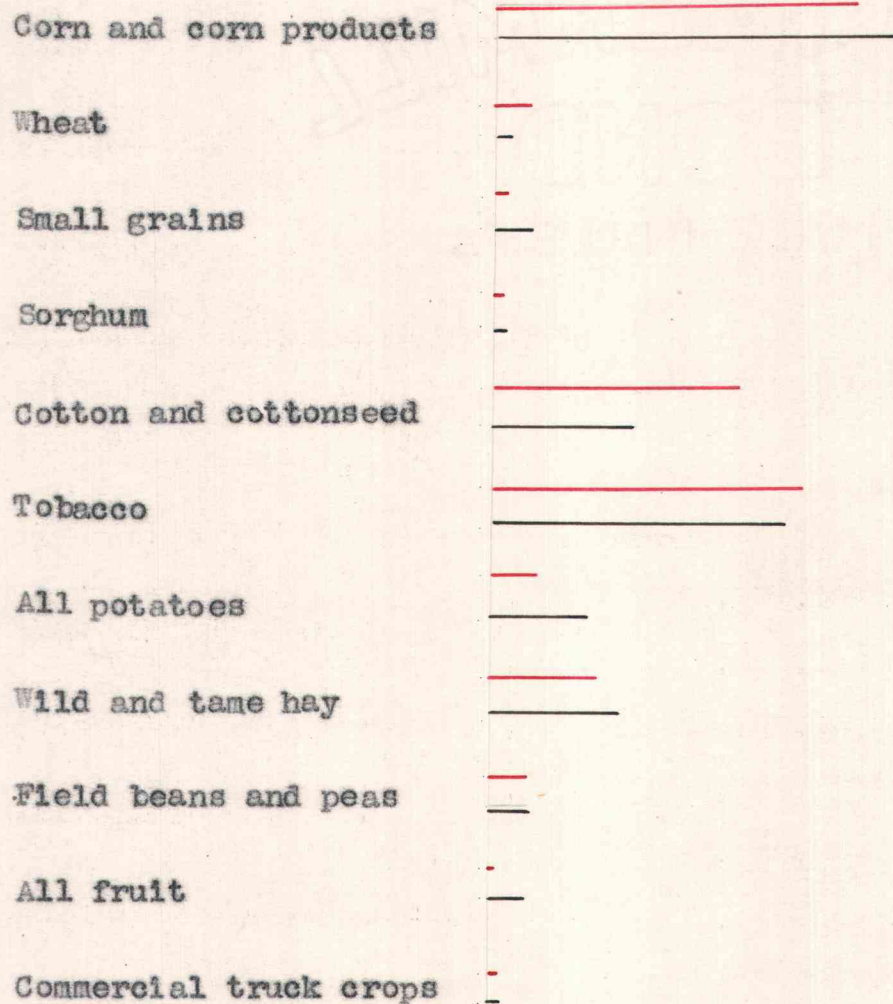


Comparison of total farm values of major crop enterprises
in North Carolina for 1925 and 1930

Legend: Scale: 1/16" equals 1%

1925 ———

1930 ———



U. S. Scope and farm value of the major crop and animal enterprises of importance in North Carolina in 1925.*

Crops	Acres	Value
Corn and corn products	101,359,000	\$1,966,761,000
Wheat	52,225,000	957,907,000
Small grains: oats, rye, barley, buckwheat	57,641,000	740,707,000
Sorghum	4,120,000	56,798,000
Cotton	46,053,000	1,464,032,000
Tobacco	1,757,000	250,744,000
All potatoes	3,092,000	604,072,000
Field beans and peas, soybeans, cowpeas, peanuts	1,959,000	48,405,000
Wild and tame hay	72,791,000	1,303,431,000
Commercial truck crops	1,878,460	235,850,000
All fruit	-----	497,275,000

Animals	Head	Value
Horses and mules	22,214,000	1,533,199,000
All cattle	60,760,000	1,397,480,000
Sheep	38,112,000	369,612,000
Hogs	55,568,000	687,858,000
Poultry	417,755,000	330,862,000

*U. S. D. A. Yearbook 1926

**Estimated value, no price was given in the yearbooks.

U. S. Scope and farm value of the major crop and animal enterprises of importance in North Carolina in 1930.*

Crops	Acres	Value
Corn and corn products	100,829,000	\$1,378,874,000
Wheat	59,153,000	517,407,000
Small grains: oats, rye, barley, buckwheat	58,406,000	611,593,000
Sorghum	3,427,000	55,486,000
Cotton	45,218,000	674,044,000
Tobacco	2,110,200	216,985,000
All potatoes	3,394,000	326,457,000
Field beans and peas, soybeans, cowpeas, peanuts	3,100,000	78,664,000
Wild and tame hay	72,009,000	1,159,704,000
Commercial truck crops	2,917,690	309,076,000
All fruit	-----	267,355,670

Animals	Head	Value
Horses and mules	18,643,000	1,382,728,000
All cattle	57,978,000	3,322,139,400
Sheep	50,503,000	450,486,760
Hogs	53,238,000	723,554,880
Poultry	469,457,000	617,205,394

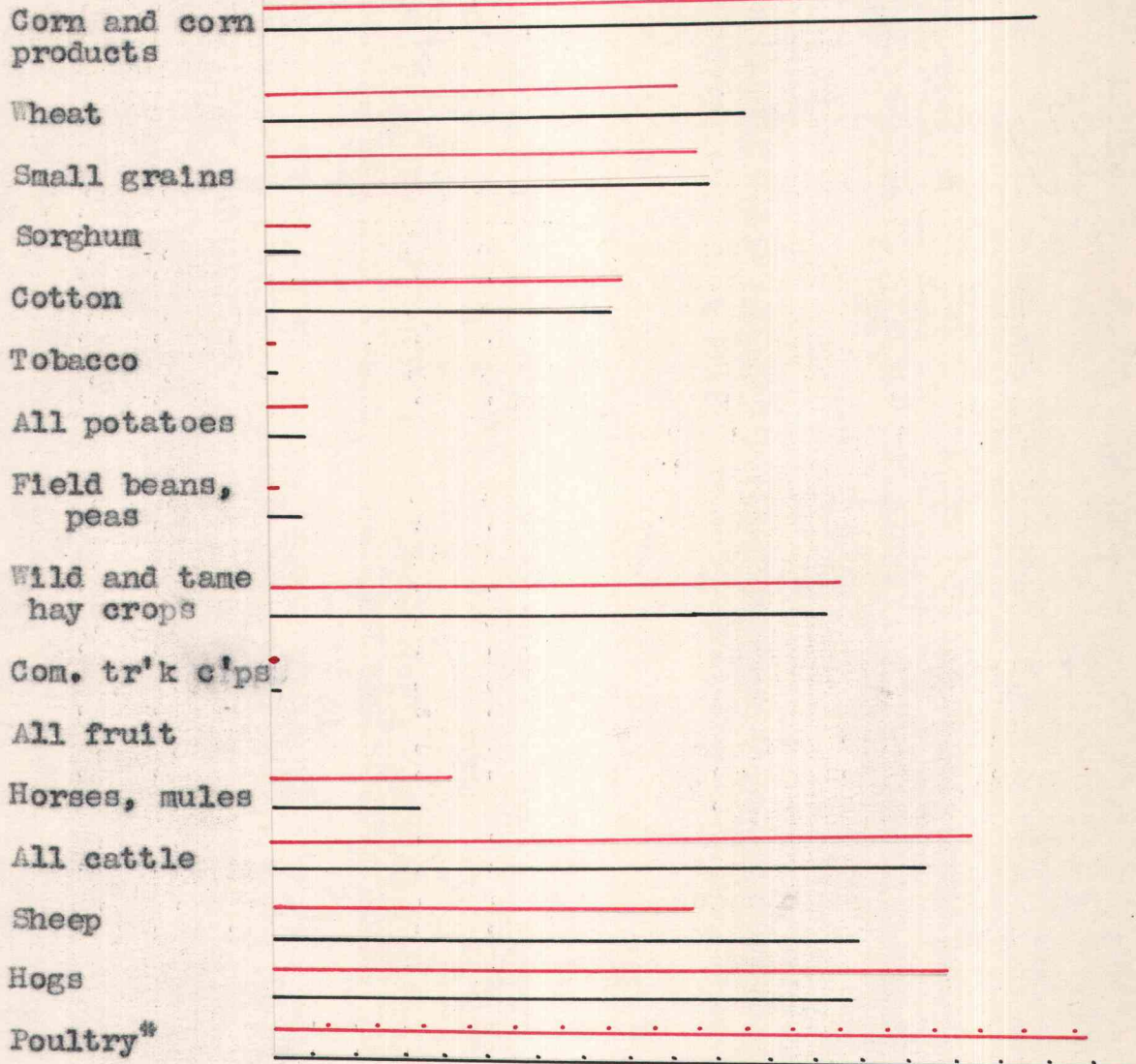
* U. S. D. A. Yearbook 1931.

Graphic comparison of the U. S. scope of the major crop and animal enterprises of importance in North Carolina in 1925 and 1930

Legend: $\frac{1}{4}$ " equals 6,000,000 acres or head

1925 ——— 1930 ———

Enterprises:



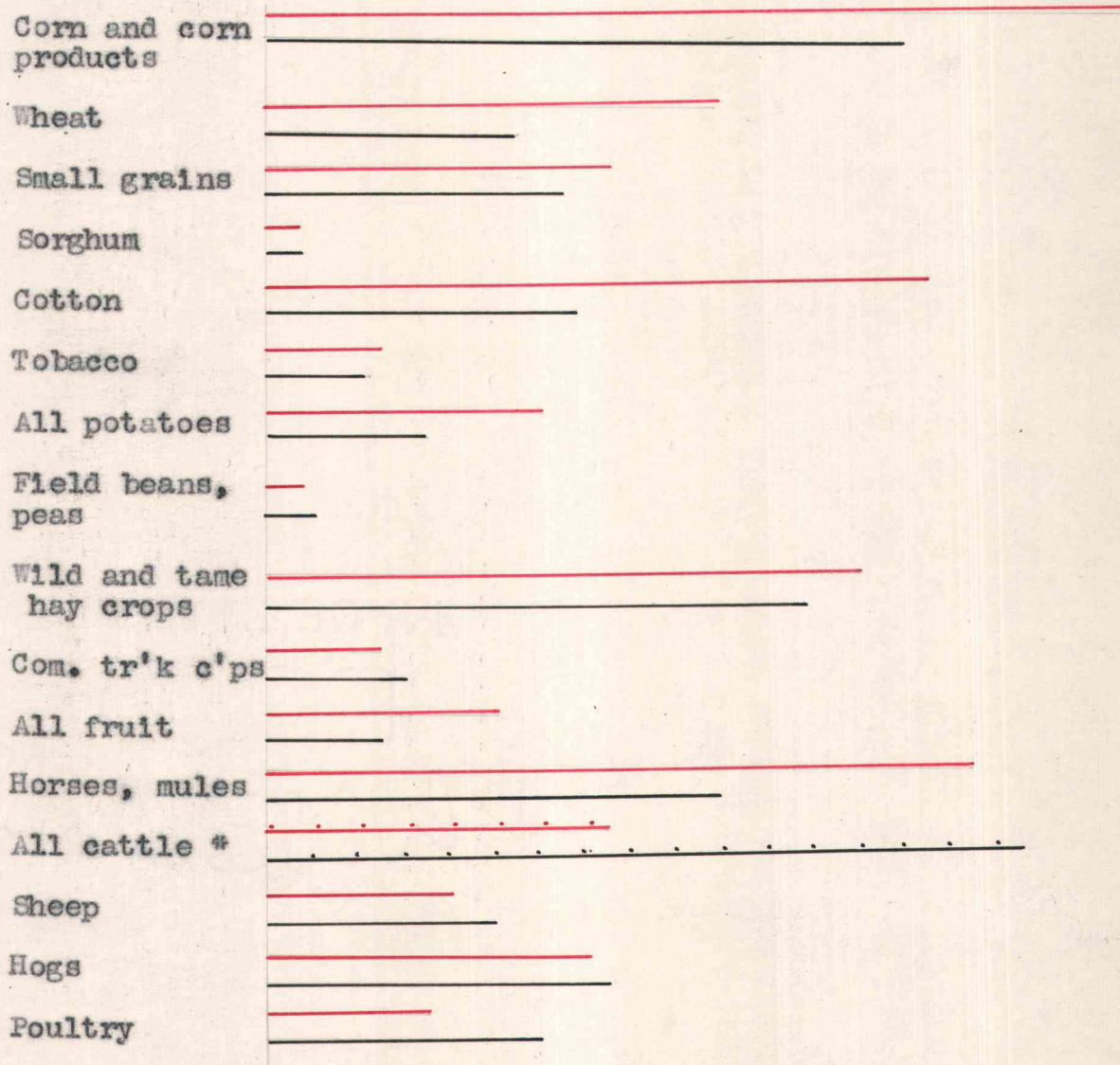
*Legend: $\frac{1}{4}$ " equals 25,000,000 head
 1925 ———
 1930 ———

Graphic comparison of U. S. farm value of the major crop and animal enterprises of importance in North Carolina in 1925 and 1930.

Legend: $\frac{1}{4}$ " equals \$100,000,000

1925 — 1930 —

Enterprises:



*Legend: $\frac{1}{4}$ " equals \$200,000,000
 1925 —
 1930 —

EVALUATION OF ENTERPRISES OF IMPORTANCE IN DETERMINING CURRICULUM CONTENT AND TEACHING EMPHASIS

Evaluating factors R---Rating WV---Weighted value	Rate the comparative values 1 to 10 for the different factors	Rate enterprises 1 to 10 for each of the factors. The product of this rating and comparative values will give weighted values. The final score for each enterprise is found by dividing the sum of the weighted values by the sum of the comparative values. ENTERPRISES																															
		Corn		Wheat		Small grains		Sorghum		Cotton		Tobacco		Potatoes		All hay		Field beans peas		All fruit		Com. truck crops		Horses and mules		All cattle		Sheep and lambs		Hogs and pigs		Poultry	
		R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV	R	WV
State Importance	10	10	100	10	40	3	30	1	10	10	100	10	100	7	70	8	80	3	30	8	80	2	20	10	100	8	80	2	20	6	60	8	50
Regional Importance	6	10	60	4	24	3	18	1	6	10	60	10	60	7	42	8	48	5	30	6	36	2	12	10	60	8	48	4	24	7	42	6	36
National Importance	5	10	50	6	40	8	40	4	20	8	40	3	15	7	35	9	45	2	10	7	35	3	15	6	30	9	45	5	25	7	35	8	40
Frequency of occurrence on farms	7	10	70	2	14	1	7	1	7	8	56	8	56	7	35	1	7	6	42	3	21	1	7	10	70	2	14	1	7	7	49	10	70
Ease of getting started in the business	6	10	60	5	30	3	18	8	48	10	60	4	24	10	60	10	60	9	45	3	18	10	60	2	12	3	18	5	30	6	36	6	36
Adaptability to state conditions	10	10	100	10	100	9	90	9	90	10	100	10	100	7	70	10	100	10	100	8	80	10	100	10	100	10	100	7	70	10	100	10	100
Markets for the enterprise	5	7	35	4	20	3	15	1	5	10	50	10	50	4	20	1	5	8	40	5	25	5	25	5	25	6	30	6	30	8	40	10	50
Economic value of the enterprise to state	10	10	100	4	40	5	50	3	30	8	80	9	90	8	80	9	90	5	50	6	60	2	20	10	100	8	80	4	40	6	60	5	50
Scope of enterprise in the state	8	9	72	3	24	4	32	2	16	6	48	6	48	3	24	8	64	5	40	10	80	1	8	5	40	6	48	2	16	7	56	10	80
Cost of starting the enterprise on farms	4	10	40	5	20	5	20	8	32	9	36	4	16	9	36	9	36	8	32	7	28	10	40	3	12	4	16	5	20	7	28	5	20
Information available on the enterprise	9	10	90	7	63	5	45	3	27	10	90	10	90	10	90	3	27	6	54	6	54	8	72	5	45	6	54	3	27	10	90	10	90
Potential Importance of the enterprise	7	10	70	8	56	6	42	2	14	3	21	3	21	6	42	10	70	9	63	7	49	7	49	4	28	5	35	7	49	8	56	8	56
Totals	87		847		471		407		306		741		762		604		632		565		546		428		622		568		353		652		678
Enterprise Score			9.7		5.4		8.6		3.5		8.5		6.7		6.9		7.2		6.4		6.2		4.9		7.1		6.4		4.1		7.4		7.8
Enterprise Rank			1		11		13		15		3		2		8		6		9		10		12		7		9		14		5		4

These weighted values, represented by the rank which the enterprises have received in the teaching evaluation give a partial indication as to the position in the curriculum, and relative emphasis that should be given to the courses pertaining to each enterprise. A further fact must be mentioned before proceeding with the curriculum organization, that is, the results of the teaching evaluation card cannot be accepted as final and conclusive. While all efforts have been made to make this teaching evaluation prove conditions as truthfully and favorably as possible, the figures, which were the medium of expression of conditions, are objective and impersonal. A truly satisfactory interpretation of this teaching evaluation card must necessarily include the objective results of the figures, seasoned and mellowed with mature personal judgement. This means, that while the figures, may, in some instances, indicate apparent importance of an enterprise, mature judgement may indicate that the figures have proved inadequate of expressing all the conditions involved -- therefore, the enterprise should not be featured to the extent that the teaching evaluation card seems to indicate that it should be.

The fact that this teaching evaluation has been cognizant of nothing but agricultural enterprises, demands mention here. Courses bearing on nothing but agricultural enterprises do not make the complete curriculum in agriculture; they simply form the basis for it. There are other courses

that must be included in the agricultural portion of the curriculum. These are the courses having a bearing on the successful conduct of the enterprises, whether as separate enterprises, or in their types of farming. Examples of such courses are: Farm Management, Soil Management, Diseases and Insects, Farm Mechanics. Without such courses, the curriculum would be incomplete.

This means that the inclusion of such courses as these in the curriculum makes it impossible to embrace all the enterprises included in the teaching evaluation as a part of the curriculum. A later discussion will show whether it is desirable that all these enterprises should be included in the curriculum. At present, however, it is desirable to determine just how much of the curriculum should be devoted to technical agriculture.

Determining What Part Of A Curriculum Should Be Devoted To Technical Agriculture In North Carolina

At our present stage in curriculum development, we are still unable to say that we can accurately gauge the amount of any class of information which should go in the curriculum. The amount of a given class of information, as applied agriculture, basic science, humanistic and professional information, must be determined on a basis of the conditions and purposes which the Land Grant College proposes to meet

in its training objectives. Therefore, some colleges can manage their curricula on less of a given class of information than others. This, however, must be borne in mind in determining the portion of the curriculum to devote to any class of information, the student must be given the maximum of the kinds of knowledge which have bearing on the field of activity in which he will work. This principle has already been expressed concerning agriculture teachers.

In arriving at the optimum agricultural content for a curriculum for the preparation of teachers of agriculture, a study of the curricula of Land Grant Colleges, and of the findings of other agencies which have looked into this phase of curriculum organization, has been made. This study shows the following condition in regards to opinions and practices in the organization of the agricultural curriculum:

1. A. & T. College of N. C. (Negro).....30.0%
2. Va. State College (Negro).....43.3%
3. State A. & M. College of S. C. (Negro).....31.0%
4. Federal Board for Vocational Education
 Bulletin 13 (1918).....40.0%
5. Federal Board for Vocational Education
 Bulletin 13 (1930).....45.0%
6. Federal Board for Vocational Education
 Bulletin 27 (1919).....38.0%
7. Report 4th Regional Conference State Super-
 visors and teacher trainers 1921.....50.0%

8. Report North Central Regional Conference State

Supervisors and teacher trainers 1922.....50.0%

9. Report Pacific Regional Conference State

Supervisors and teacher trainers 1922.....40.0%

Average.....37.0%

These findings of the portion of the agricultural curriculum to devote to technical agriculture are by no means in agreement with each other. The differences fluctuate from thirty to fifty percent. It is notable here, that the North Carolina Land Grant College has the lowest agricultural content in its curriculum. In the light of the teaching evaluation made on the agricultural enterprises of North Carolina, it is doubtful whether a curriculum having only 30% of agriculture can satisfactorily cover the field of agriculture in North Carolina. This statement seems tenable when the agricultural portion of the North Carolina curriculum is studied. The set-up of the North Carolina curriculum appears on the following page. A comparison of this agricultural content with the list of enterprises ranked in the teaching evaluation card further substantiates the previous statement.

Fuller comment on the agricultural portion of the North Carolina curriculum will be made later in this section. Suffice it to say now that an increase in the percentage of agriculture in this curriculum is very desirable. It is therefore recommended that the agricultural portion of the curric-

ulum be increased from thirty to forty percent. On a basis of 196 credit hours for graduation, this would give a content of about 78 quarter hours for technical agriculture instead of 57 quarter hours, as at present.

(Note: A study and comparison of the most common courses in the curricula of six agricultural colleges in North Carolina, South Carolina and Virginia is included in Exhibit "A" of the Appendix.)

Distribution of courses in the agricultural portion of the Curriculum for teachers of agriculture now followed in North Carolina. (All courses are required.)

	Credit Per Hours Cent	Credit Per Hours Cent
Courses pertaining to the poultry enterprise.....	10	17.54
General poultry problems.....	4 7.00	
Incubation.....	3 5.26	
Brooding.....	3 5.26	
Courses pertaining to animal enterprises.....	14	24.56
Principles of dairying.....	5 8.77	
Diseases of farm animals.....	3 5.26	
Breeding and judging.....	3 5.26	
Animal nutrition.....	3 5.26	
Courses pertaining to crop enterprises.....	19	33.33
Vegetable growing.....	4 7.00	
Field and forage crops.....	3 5.26	
Home grown fruits.....	3 5.26	
Cotton.....	3 5.26	
Tobacco.....	3 5.26	
Diseases, insects, pests.....	3 5.26	
Courses pertaining to other phases of agriculture.....	14	24.56
Soil management.....	3 5.26	
Nature and properties of soils....	4 7.00	
Farm beautification.....	4 7.00	
Farm management.....	3 5.26	
Total.....	57	99.99

(Note: These courses are described in the following pages.)

Figures from the N. C. Land Grant College Curriculum for teachers of agriculture 1931-32.

Description Of Courses Found In The Agricultural Portion
Of The Present North Carolina Curriculum*

1. General Poultry Problems. A course reviewing the general field of poultry, touching especially the phases of care, management and pathology, giving at the same time all essentials a beginner should know. 4 credits.
2. Soil Management. A course dealing with the methods of soil utilization including the methods of fertilizing the soil, mixing and applying commercial plant foods, and the use of green manure, stable manure, lime, and the influence of crop rotation and fertilizer on the soils as shown by field experiments. 3 credits.
3. Principles of Dairying. The course takes up secretion, composition, testing and separation of milk; the farm manufacture of cheese, butter and ice cream. 5 credits.
4. Vegetable growing. A study of the general principles involved in vegetable production. The students will be given an opportunity to carry out some of the principles taught thru practical work in assigned plots of which they will have full charge. They will be expected to plant and cultivate their plot. 4 credits.
5. Field and Forage Crops. The course includes lectures and recitations on the history, production, adaptation, use, harvesting and curing. The identification of forage plants

*College Catalog 1931-32.

and their seeds, pasture and forage crop regions and the plotting of maps of sections adapted to each of the leading forage crops, with special emphasis on those of North Carolina. The crops are considered, from the standpoint of pasture crops, hay crops and soil improving crops. 4 credits.

6. Nature and properties of Soils. A course dealing with the origin, formation and classification of soils and their chemical relationships. The chemical, physical and biological properties, with reference to composition and plant relations of soils. The practical use of lime, fertilizers and other means of soil fertility. 4 credits.

7. Diseases of Farm Animals. A course dealing with a general consideration of the causes, prevention and treatment of diseases of farm animals, the manner of spread, disinfectants and their application; general hygiene and stable sanitation, including drainage and selection of site. 3 credits.

8. Selection and Judging. This course is designed to acquaint students with the types and breed characteristics of farm animals by use of the score card comparative judging and selection of breeding stock. 3 credits.

9. Animal Nutrition. A study of the general principles of nutrition as applied to livestock, composition of feed stuffs, comparisons and use of feeding standards, calculating rations, methods of feeding for economic production. 3 credits.

10. Home grown Fruits. The course was designed for the

purpose of interesting the student in the production of fruit for home consumption. Consideration is given to the general principles of fruit growing, as locations, sites, soils, fruits, varieties, pruning, spraying, and the practices involved in orchard management, with some consideration to small fruits. 3 credits.

11. Farm Management. 3 credits

12. Incubation. This course deals with the practical phases of incubation and requires the successful operation of an incubator. Students should provide themselves with funds for purchasing from 6 to 12 dozens of good setting eggs, price ranging from 60 cents to \$1.00 per dozen, and meet unnecessary loss to college property. 3 credits.

13. Brooding. The successful brooding of baby chicks is required in this course together with practicums in sanitation and feeding. The student must be able to bear his own expenses on his project and be responsible for any unnecessary loss to college property. 3 credits.

14. Diseases, Insects, Pests. The identification, life history, habits and methods of controlling insects of economic importance to the farm and home. Laboratory work will also include identification, collecting, mounting and preserving insects studied. The important plant diseases which effect the crop plants of the south. A study of the symptoms exhibited by the host plants, the causal organism, and the control measures. 3 credits.

15. Cotton. The course includes lectures and recitations on the history, origin, production, adaptation, varieties, cultivation, harvesting and grading with some reference to marketing, diseases and control measures, rotation and the upkeep of soil fertility under long time cropping systems.

4 credits.

16. Tobacco. Lectures and recitations on the history, production, adaptation, type, varieties, cultivation, harvesting, grading, marketing, diseases and control measures, based on North Carolina conditions. 4 credits.

17. Farm Beautification. A general study of the principles of the art of beautifying the farm grounds. Designing and planning lawns; the planting, care and maintenance of plants for the farm grounds. 4 credits.

Set-up Of A Desirable Curriculum For The North Carolina
Land Grant College, With Comments On The Present
North Carolina Teacher Training Curriculum

The previous discussion brings out the fact that in practice, the agriculture in the curriculum for the preparation of teachers of agriculture amounts to about 40% of the total curriculum. Since this is true, if that percentage were applied to the North Carolina Land Grant College curriculum, which is now on the basis of 196 quarter hours credit for graduation, it would contain approximately 78

quarter hours of technical agriculture.

The present curriculum in the North Carolina College, as shown in the chart on page 51 contains but 57 quarter hours of technical agriculture. This represents 21 hours less than the amount of time that would be required if 40% of the total time were allotted to agriculture. To be sure, if the agriculture in the curriculum is increased, other non-agricultural courses in the curriculum must be decreased in proportion. But, this fact stands out; the group being considered by this thesis is the group preparing to teach agriculture. The particular needs of the group are the needs of the skills and abilities of the farmer and of the skills and abilities of the teacher of agriculture. Therefore, many courses considered as basic in teaching in other fields may not be as basic in the field of teaching agriculture. All courses that have no vital connection with the development of agricultural skills and teaching skills peculiar to the teacher of agriculture, should be reduced in the emphasis given them in the curriculum.

It must be borne in mind that the curriculum must be made a valuable medium in supplying the student needed kinds of information. This means that it should include and emphasize the parts of agriculture with which the student is likely to have difficulty. This view point gives a basis for dividing the component courses of the curriculum into two classes (1) essential or difficult courses and (2) non-es-

stantial or relatively elementary courses. The former class demands much emphasis, the latter class, little.

The following discussion will consider each of the North Carolina agricultural enterprises for the point of view of showing (1) its proper place and emphasis in the curriculum, (2) whether the enterprise is properly placed and emphasized in the present North Carolina curriculum, and (3) other supporting courses which the enterprise needs. This discussion takes into consideration these and other factors: (1) the rank which the enterprise received in the teaching evaluation on page 45, (2) the 12 Contributory Objectives of the Federal Board for Vocational Education for the teaching of agriculture, page 14, (3) the adaptability of the enterprise from point of view of teaching material, information, carry-over, ease or difficulty in handling the enterprise for project work, and the like, and (4) the relation of the enterprise to rotations and types of farming in the state.

1. Corn.

On the basis of the evaluation given, corn is established as the first ranking enterprise of North Carolina. Many factors have combined to make this so. Corn finds a variety of uses, among which are: use as silage for farm animals, as hard corn for fattening hogs, as cracked grain in chicken feed, as stover for wintering animals, as meal for human food. Corn is adapted to soil and climatic con-

ditions of all sections of the state and fits into the rotations and types of farming common to all sections.

It is a crop easier to grow than most any of the cultivated crops, peculiarly adapted to land that is likely to prove too full of grass and weeds for other cultivated crops. Farmers universally are familiar with corn. In 1930 it was produced on 85% of the farms in all counties of the state as a necessary contributory enterprise of the farm. The requirements in finance, time and labor in production of the enterprise are such that all farmers may enter into the production.

From point of view of teaching possibilities inherent in an enterprise, corn is without a peer. The ease with which the enterprise may be successfully produced makes it an excellent type of enterprise for beginning study. Further, the large growing nature of the corn plant makes it ideal for laboratory work in plant parts and structure. Much concerning corn production has a direct carry-over into the production of other common enterprises. The following examples illustrate the point: (1) corn requires a carefully prepared seed bed. The principles concerning seed bed learned for corn are quite as valuable in connection with other enterprises; (2) the ease with which corn fits into rotations makes it an enterprise facilitating the teaching of principles of rotation; (3) principles of soil management brought out by the heavy plant food requirements of corn, can be

shown to exist for other enterprises in a similar manner.

Corn is particularly valuable to the high school teacher of vocational agriculture as a project enterprise. It is easy to produce, contains relatively simple problems for the project boys to solve, is not very costly to conduct, does not require a bulk of technical knowledge, can be completed in a reasonable length of time, offers splendid ownership possibilities, is not likely to be a total failure, does not require complicated inventories and records and takes away from project boys certain natural, tho probably covert fears which they would hold in connection with a less familiar project enterprise.

Since the learning process is facilitated by passing from the less difficult to the more difficult, it is very desirable to have in the agricultural portion of the curriculum, some enterprise of the "stepping stone" type. Corn will serve such a purpose.

The curriculum of the North Carolina Land Grant College contains no course relating to the corn enterprise. This is unfortunate. Teachers of agriculture need to know the same things which the farmers in North Carolina know, further, the teachers need to know these things better than the farmers, or at least, to a more efficient end than the farmers know them. Since the prospective teacher's original point of contact with the things which he needs to know is in the curriculum of the college, the curriculum should include

at least, the information on the enterprises which are most general through-out the state.

In view of these facts cited, it must be apparent that some consideration must be given the corn enterprise in the curriculum for preparation of teachers of agriculture for North Carolina.

2. Tobacco.

From point of view of the emphasis in the curriculum to give to tobacco, it is almost trite to mention the economic value of the enterprise to the state; suffice it to say that tobacco ranks near the top in actual farm income. In 1930 it was worth \$75,920,000.

This enterprise demands prominent emphasis in the curriculum for many reasons: (1) in 1930, 41.9% of the farms in 81% of the counties of the state reported tobacco production (2) the tobacco region of the state is the Piedmont Section and western part of the Coastal Section. It will be remembered from the map on page 24 that most of the teachers of agriculture in North Carolina are located in these sections of the state, (3) within the province of the tobacco enterprise there is an excellent opportunity of realizing at least five of the 12 Contributory Objectives of the Federal Board for Vocational Education in teaching agriculture, as follows: (a) to produce agricultural products efficiently. In an enterprise where price lines are so closely drawn as

they are in the tobacco enterprise at present, efficiency factors must be closely watched. It is also true that tobacco is very sensitive and responds best to certain plant foods from particular sources. These factors, if known result in better quality and quantity of the product of the enterprise. (b) To market agricultural products economically. At present the marketing of tobacco is one of the most sordid operations pertaining to the enterprise. The marketing is done on the basis of "so called" grades. Unless the farmers can be inspired to master these grades to the extent that they can know when "auction" buyers are paying reasonable prices for grades concerned, they must continue their present inefficient methods of marketing. (c) To select and purchase suitable farm equipment and supplies. Tobacco responds to proper frequent culture. It requires a special type of culture peculiar to itself. For this special culture, special types of equipment are needed. It is in connection with obtaining these pieces of equipment from point of view of economy of purchase and satisfaction of operation in time and labor required, that special training is needed. (d) To manage farm business effectively. If there is an enterprise requiring good managerial practices, it is tobacco. It requires frequent expenditure of labor in production, harvesting, curing and grading; therefore, if a farmer is so hapless as to err in selection of location of his tobacco fields, curing barns or grading sheds,

the amount of time and lost motion required in his operations would be serious factors for consideration. Also, tobacco is exacting in its soil requirements, so if the farmer has his satisfactory tobacco land tied up in other crops to the extent that his tobacco has to be grown on unsuitable land, his resulting tobacco crop would be markedly reduced in quality and value. Therefore, managerial abilities in connection with tobacco stand to the forefront. (e) To use scientific knowledge and procedure in a farming occupation. In North Carolina, the tobacco enterprise is receiving as thorough study and investigation as any enterprise in the state. This study results in periodic release of newer and better information concerning the conduct of the enterprise. Special attention is paid to such phases as: (1) fertilizers: kinds, amounts and sources of plant food elements; (2) proper application and time of application of plant food; (3) varieties; (4) diseases and insects and their control measures.

Farmers are likely to be slow in picking up such information unless some agency or individual helps them in finding it. The teacher of agriculture is the likely individual to help the farmers in making the discovery. He is also in position to help the farmers adjust their plans so as to incorporate this newer information in their practices. But, the teacher will be able to do this, only on the basis of the previous training which he has received in his Land Grant College.

It must also be said that tobacco forms the key or major crop in one of the two principal types of farming in the regions in which it is grown. Cotton is the other key or major crop in a type of farming common to the same regions.

The exceedingly short growing season which tobacco requires makes it adaptable to most farms. It occupies the land only from about April to July or August. In most cases the land is left absolutely idle after tobacco has been harvested. In some of the more progressive cases, however, summer legumes are planted at the last cultivation. These legumes, at very best, last only until frost. In practice they are cut before frost. In either case, whether the land is left bare, or is planted in summer legumes, there is a large portion of the year during which the land is bare. This makes a major managerial problem in land conservation. The problem is not near solution by the farmers themselves, nor is it likely that they will solve the problem alone. It is necessary that some agency or individual shall come forward and help them. Again it is evident that the teacher of agriculture is in a strategic position to give this help. But, if the teacher is to be able to do this, it is highly important that he be thoroughly trained for the job. This training for the teacher, in the main, comes from the Land Grant College.

A glance at the curriculum now in use in the North Carolina College shows that tobacco is emphasized in a single

course. This course carries less credit emphasis than five other courses. Credit emphasis allowed this course is equal to that of eleven other courses. Should this be construed to mean that tobacco merits no more emphasis than eleven other courses in the curriculum?

In view of the discussion here, it appears that tobacco should be emphasized as highly as any other enterprise because of its exacting requirements. This fact will be established more fully as other enterprises are discussed.

3. Cotton.

In 1930, the cotton enterprise had the third highest distribution of any crop enterprise of the state. It was reported on 54.2% of the farms in 80% of the counties of the state. In the same year, cotton had the state's third highest farm value; it accounted for \$39,352,000 or 12.5% of the total crop value. The statistics given on pages 36 and 37 show that for the five years 1925-30, cotton maintained its position as the third ranking enterprise in farm value. It is significant to note however, that cotton is decreasing in scope and value over this period of years. Statistics show a drop from 4,034,000 acres worth \$84,089,000 or 20.9% of the total farm value in 1925 to 1,631,000 acres worth \$39,352,000 or 12.5% of the total farm value in 1930. This marked decrease in both scope and farm value of the enterprise may be accounted for in two ways: (1) the existence

of a large over-supply of cotton has tended to depress prices to the extent that marginal farmers have shifted operations to other enterprises; (2) the increasing depredations of the Cotton Boll Weevil have made it increasingly difficult to maintain satisfactory yields for the labor and capital invested in the enterprise.

As the farmers have tended to desert the cotton enterprise, they have increased the scope of the tobacco enterprise as the source of their cash income, however, they have not found an increase in farm value for their tobacco equivalent to the increase in scope of the enterprise. The following figures illustrate: In 1925 the tobacco enterprise stood as follows: 547,000 acres having a farm value of \$103,802,000 or 25.8% of the total crop farm value. In 1930 the following changes were made: 807,745 acres having a farm value of only \$75,920,000 or 23.0% of the total farm value.

Even such marked changes as these have not robbed cotton of its third ranking. In fact it is not likely that it will lose its position. The exit of a large number of the farmers from participation in the enterprise, and curtailment of operations on the part of those farmers still producing cotton will speedily solve the problems which drove the marginal farmers out of the field. These problems are the problems relating to the Boll Weevil and over-production. Curtailment of operations and reduced production are the cure for over-production, while better cultural

practices in connection with restricted operations will eliminate the Boll Weevil.

Since the cotton enterprise is holding its position even in these times of adversity, it is not likely that other enterprises will outstrip it when its problems have been solved.

The farmers from one extremity of the state to the other on more than half the farms produce cotton. This shows that cotton is highly adaptable. Further, it is an enterprise requiring little, other than fertilizer and equipment, for production. The simplest plows are sufficient to get by with. This means that it is possible for most any farmer to produce cotton. It offers another advantage to the farmer in that it is not damaged by age after it is harvested, therefore if the farmer is financially able, he can hold the product indefinitely, for better prices, and the product will remain as good as on the day harvested. In the case of most other enterprises, the holding period is limited to the extent that the product must be disposed of at some price, within a certain time limit. The following examples will illustrate the point: tobacco markets close at a definite time, so all tobacco must be sold before the date of closing; wheat or potatoes must be sold before the next year's crop comes on the market; hogs and poultry sell best at certain seasons.

The advantages in favor of cotton, really make it a

valuable farm asset. Its use as security for loans is also well established.

Cotton, which occupies the land from early May, until at least August, fits well into the rotations and types of farming common to the state. The earliness of harvesting and lateness of planting combine to make it possible to use winter cover crops in the soil building program on the cotton land. This was a handicap pointed out in connection with the tobacco enterprise.

Cotton offers many teaching possibilities. One thing already mentioned briefly, is the need for skill in properly protecting against the Boll Weevils. Other teaching possibilities inherent in the enterprise are: (1) possibility of use in the project work. The slight financial requirements make it possible for boys to own acreages of it as projects; (2) principles of rotation; (3) principles of soil improvement; (4) proper culture; (5) selection of varieties and the like.

A special teaching objective to be realized in connection with the cotton enterprise is the "ability to market the product economically" (a Federal Board for Vocational Education objective). The very nature of this enterprise should make it the most efficiently marketed product in the south, but, practice proves that it is not. Since marketing of cotton offers a major problem, it should be a phase of the study of the enterprise receiving special study.

The curriculum of the North Carolina Land Grant College has one three credit course pertaining to the cotton enterprise. Any agricultural curriculum preparing teachers to teach agriculture in North Carolina should have a course or some courses relating to cotton. Such a course or courses could be made to meet the future teaching needs in proportion as they were inclusive of the main points of this discussion.

4. Poultry.

In the teaching evaluation, poultry ranks fourth as an enterprise; in frequency of occurrence on farms in 1930, it ranked second only to potatoes. Poultry is very generally distributed over the whole state. If it were possible to say that there is a concentration of the enterprise in any section of the state, that distinction would go to a few counties in the northwest and southwest portion of the Piedmont Section. Poultry as a major enterprise would not impress one traveling in North Carolina. It is hardly apparent, but, when one realizes that poultry, to some extent, is on 36% of all the farms, the enterprise makes a different impression. The enterprise is making a slow but definite growth. Between 1925 and 1930, the percent of the total farm value derived from poultry increased from 8.4% to 8.7%.

As teaching material, poultry among the animal enter-

prises, occupies a place similar to that occupied by corn among the crop enterprises. It is familiar to farmers and project students alike. In teaching poultry, many principles valuable to poultry carry over into other enterprises, as: principles of sanitation, range management, nutrition, cost studies, efficiency factors. Poultry has an added advantage for teaching in that the individual fowls of the enterprise are not so valuable as to make laboratory and experimental work impossible. It is a good project enterprise because the boys can get into it without a high overhead or a large financial tie-up in the individual fowls of the project. Further, the loss of one or a few of the fowls would not necessarily cripple the project as such a loss would in connection with a dairy, hog or sheep project.

Poultry in North Carolina is used more as a minor enterprise than for its cash income value, therefore, the project boys get real chance at managerial experiences and studies in connection with the enterprise that they might be unable to get with other enterprises on the farm. This is true because their fathers are not as hesitant in turning over to the boys the poultry on the farm as they are in cases bearing on the major enterprises of the farm. Some of the valuable studies which the boys could get would deal with breed selection, determination of scope of the enterprise, location of the plant, breeding, disease and pest control.

Withal, poultry is an important enterprise to the ag-

riculture of North Carolina as a farm home supplement. It demands a prominent position in the agricultural portion of the curriculum.

It will be noted in the chart on page 51 that the North Carolina College curriculum allows 10 hours to courses relating to the poultry enterprise and only 14 hours to courses relating to all other animal enterprises; in other words, 71% as much time is allowed to courses dealing with the poultry enterprise as to all other animal enterprises. This distribution of emphasis is questionable, especially questionable when it is noted that the North Carolina curriculum makes no provision for study of the Hog and Sheep enterprises. Of this more will be said later. But, it must be said now, that an enterprise ranking fourth in the teaching evaluation, and amounting in practice to only a minor enterprise, should not receive more emphasis than all other animal enterprises. It is certain that this should not be true to the extent of excluding the next ranking enterprise from consideration in the curriculum.

5. Hogs.

The hog enterprise is represented on 49% of the farms of the state. It is an enterprise bringing in the fourth highest source of income among the animals in 1930. The enterprise is general over the state as a minor enterprise, but, in the Mountain Section, it serves as a major enter-

prise to a limited extent. This is an enterprise having a brighter future than most enterprises in the state at present. In the first place, good rail and highway facilities make it easy to ship hogs to market centers, also these same good highways have created a demand for hogs for barbecue purposes at the numerous lunch stands now dotting the roadsides. It is hardly necessary to say that pork is one of the chief meats in the diet of the south.

The hog enterprise offers fair possibilities for teaching and project work. In this connection should be mentioned the fact that project work and ownership on a cumulative basis is possible with hogs. This means that it is possible for a boy to have a project in this enterprise which naturally grows into something in the nature of farming on a small scale. He could start out with a hog or two in his first year. To this he might add a few acres of corn as a contributory project to his hogs in the second year. The scope of both the hog and corn enterprises could be expanded in the third year and so forth. Such an arrangement might not be so workable in connection with some other projects where the animals take longer to reach a marketable size and age than hogs do. Certainly it would not be satisfactory with the crop enterprises. When a crop enterprise is harvested, there is something in the harvesting that connotes finality-- the cumulative aspects of the crop projects are not as apparent as they are in the hog

projects. Further, the boy having a hog project has the chance to see his small beginning actually developing into a worthwhile undertaking. His hogs develop quickly. It is found that hogs are most profitable when grown in six or less months. This means that the enterprise can be accelerated to any desirable extent.

Managerial possibilities are plentiful in the enterprise.

The enterprise is well adapted to North Carolina. It was pointed out that corn is grown all over North Carolina, so, with an abundance of corn as a feed for hogs, the enterprise would involve little extra expense to any farm, either as a major or minor enterprise. Also the state is favored with a long frost free season in which hog grazing is possible. This season extends from April until November, according to the Weather Bureau. The winters are relatively mild, so expensive houses are not required.

Such advantages should weigh heavily in favor of any enterprise. However, the North Carolina curriculum for future teachers has no course which touches the hog enterprise. Such an omission is an apparent weakness in the preparation of teachers who will face hog problems on 49% of the farms with which they will work. There should be some consideration given to hogs in any curriculum in preparing teachers of agriculture in North Carolina.

6. Hay crops.

Hay crops make a very important enterprise in North Carolina. The importance is surprising. If only the tame hays were considered, the enterprise would not be so striking, but, when wild hays are added to the tame hays, the value of the total group is noticeably increased. Hay production in North Carolina is not particularly difficult. The favorable growing season has been mentioned. With this fact should be mentioned the existence of a regular amount of rainfall and an abundance of much idle bottom land. It is on this idle bottom land that much of the wild hays of the state is grown. The value of these wild hays is further increased in view of the fact that the only expense connected with them is the expense incidental to harvesting.

The many favorable conditions in North Carolina, combined, should make North Carolina a leading hay producing state.

As an enterprise for teaching, much could be done in connection with hay crops, in the rotation, as soil builders, from point of view of field selection, choice of kinds of crops to grow, harvesting, curing.

The nature of the enterprise makes it necessary that it be grown on an extensive scale, so it is not adapted to project work.

The North Carolina curriculum is inclusive of a course designated Field and Forage Crops, which seems to cover

this enterprise very well.

7. Horses and Mules.

Some writers prefer not to regard horses and mules as a farm enterprise on the grounds that in most cases they are not used in reproducing. However, in as much as the farms are vitally interested in, and have so much tied up in the horses and mules, teachers of agriculture should be trained in the skills pertaining to the well being of these animals. The North Carolina Farm Forecaster for 1930 fixes the value of horses and mules as \$85 and \$119 per head respectively. Naturally the farmers will have a special interest in animals of such value per head. It is true that the number of such animals per farm will vary from one to a relatively large number, but, regardless to the numbers, the animals bear the same relation to the success of all the farms.

These facts make it necessary to include some kind of course in the curriculum for the preparation of teachers of agriculture. Such is not now done in the North Carolina College curriculum.

8. Potatoes.

Statistics show that potatoes increased from a frequency of 55% of the farms in 1925 to 94% of the farms in 1930. This is the highest frequency of any enterprise in the state. For the same years, the farm value of the enterprise increas-

ed from \$19,335,000 to \$24,443,000. This is an unquestioned growth in importance and value. The increase in importance is general over the state. For the state as a whole, the enterprise is still minor. It is a major enterprise only in the Coastal Section and in a few counties of the Mountain Section.

Potatoes lend themselves to all types of farming. The potato land always yields two crops a year, either of potatoes, or of potatoes and another crop as: potatoes followed by corn, or potatoes followed by a hay crop.

In connection with teaching possibilities, there is hardly a finer enterprise. The project carried in connection with potatoes gives a chance for management in selecting the crop to succeed the potatoes and also manipulative jobs as: treating for diseases, cutting, planting, diseases and insects, marketing.

From these points of view, this enterprise should have a place in the curriculum. At present, the North Carolina College curriculum does not have a course bearing on the potato enterprise.

9. Field beans and peas.

The classification here includes all the larger legumes grown for seed, food or hay. The frequency chart shows a distribution of the enterprise on about 30% of the farms in 1930.

We find these crops particularly adaptable as "catch" crops. They are rapid growing crops and do practically as well when planted late as when planted early. They are also used as second crops on land which has been in early potatoes.

As an enterprise, field beans and peas rank relatively low in importance. In most instances they serve as contributory crops. Some of the varieties of beans and peas are used as human food, others as stock feed and still others for manufacturing. Taken as an enterprise, much emphasis is not needed because the requirements in production are few. The North Carolina College curriculum makes no mention of these crops except in the combination course Field and Forage Crops.

If these crops are considered in the curriculum, very little emphasis would suffice. If time were too limited the enterprise might just as well be left as an elective.

9. All Cattle.

Between the years 1925 and 1930 there was a growth in the cattle enterprise. The frequency increased from 50% to 57%. At present the cattle enterprise is a major enterprise in the Mountain Section and a minor enterprise in other sections. Of course the towns have their neighboring dairies, but all the farms do not yet have even a single family cow. However, this shortcoming on the part of some of the farmers

does not prevent the cattle enterprise from having a tie with field beans and peas for ninth rank in the teaching evaluation.

Beef cattle and dairy cattle are included under this same heading in the teaching evaluation. The beef cattle are confined almost exclusively to the Mountain Section, while the dairy cattle are more generally distributed. It was pointed out previously that Negro teachers of agriculture had never been located in the Mountain Section, so that would mean that a consideration of beef cattle in the curriculum is not vital to them. With dairy cattle the case is different.

The preparation of teachers of agriculture should be inclusive of some knowledge of dairy cattle, since the teachers will come in contact with the enterprise on more than half of the farms with which they work.

The present North Carolina College curriculum contains one course, Principles of Dairying and some further supporting courses which have a bearing on cattle or other animal enterprises. Such a general course, with some supporting courses would appear to be enough to give prospective teachers a requisite amount of knowledge on the enterprise.

10. All Fruit.

The fruit enterprise in North Carolina has much potential importance to it, but, it is undeveloped in the state as

a whole. The concentration points of the enterprise are in the Mountain Section and a few isolated regions of the western part of the Piedmont Section. This does not include the few trees that may be found on most of the farms. However, these trees are usually not cared for in such a way as to indicate a particular effort toward fruit growing.

In the curriculum, it would be sufficient to have a course dealing with the very fundamentals of fruit growing, such as: setting trees, pruning, spraying, insects, diseases and the like. The present North Carolina College curriculum gives one such course, which is sufficient in view of the status of the enterprise.

11. Wheat and other small grains.

The principal small grains of North Carolina are oats, rye, barley, and buckwheat. To this group, wheat may be added because it has practically the same growth characteristics and cultural requirements of the grains named. Taking all these enterprises together, not much real value to the state is represented. In the teaching evaluation, wheat ranks eleventh and small grains thirteenth. This is low in a comparison where there are only sixteen enterprises considered.

In a curriculum, all these crops may be considered in a single course. Such a course would not need high emphasis. Consideration as an elective would probably suffice.

12. Commercial truck crops.

This group of enterprises has next to the lowest rank of any of the state's cultivated crops. It is of importance only along the southern edge of the Coastal Section and the southeastern edge of the Piedmont Section. If a course were included in the curriculum bearing on these enterprises, it should have slight emphasis or be an elective.

13. Sheep and Lambs.

This enterprise which is grown only on a small scale in the Mountain Section, has little importance in a curriculum for the preparation of Negro teachers. It is grown in the section of the state outside the usual territory covered by Negro teachers. If the enterprise is made the basis of a course in the curriculum, the course should be included only as an elective.

14. Sorghum.

While sorghum has a general distribution over the state, it is not very valuable. It accounts for less than 1% of the total value of the state's farm products. If it were included in a course in the curriculum, the course should be an elective.

This terse statement of the status of sorghum in North Carolina completes the discussion of the enterprises of

North Carolina having weighted values from the teaching evaluation. In the discussion it was pointed out that the North Carolina curriculum for teachers of agriculture is lacking in courses pertaining to certain well established enterprises. After a consideration of four other shortcomings of the North Carolina curriculum, the strong points of the curriculum will be brought out. (1) This curriculum contains a separate course on Breeding and Judging. While this may be a splendid course, it will be found that there are many other courses that the prospective teacher may need worse. A course such as this one should not be included in the curriculum unless it is positive that no other course or courses can convey the desired information. Such would not be true in this case. The principles involved in the course in Breeding and Judging could well be taught in connection with courses on the particular animals in question. This procedure would make it possible to drop the course in Breeding and Judging from the curriculum, thereby making room for some other more valuable study. (2) Relatively too much emphasis is given to poultry as an enterprise in the curriculum, in comparison with the other animal enterprises. (3) Relatively too much emphasis is given to poultry and animal enterprises in the curriculum in proportion to the emphasis given to crop enterprises. This curriculum shows 41% of the time given to poultry and animal enterprises and 57% to crop and other en-

terprises. The agriculture of the state really contains 11 important crop enterprises and only 5 important animal enterprises. Certainly the courses dealing with both these groups of enterprises will have special supporting courses along with them, but, it does not appear that 5 animal enterprises would require 72% as much emphasis as 11 crop enterprises. It would appear that a redistribution of emphasis would be desirable in this curriculum. (4) This curriculum contains no course or courses having a bearing on farm machinery or farm mechanics of any kind altho it is true that at present farming is done more by machinery than ever before. This machinery which is used is expensive to buy in the first place, and in the second place, the efficiency of the work done by the machinery will depend upon the mechanical condition in which the machinery is kept and upon the skill of the operator. In connection with both these factors, the teacher of agriculture can be a great help. However, the amount of help that he will be able to give will depend upon the amount of information which he has bearing upon farm machinery. Further, his information in this line would also make it possible for him to teach elementary farm machinery to the boys in his Smith Hughes classes. The knowledge thus gained by the boys would result in more machinery on the farms, and in better care of the machinery already there.

Some kind of course in farm machinery or farm mechan-

ics is deserving of a place in the curriculum.

Now, concerning the strong points in the North Carolina curriculum: the following courses seem desirable as offered in the present curriculum for the preparation of teachers of agriculture. The approval of these courses is based upon the needs of the teachers: (1) Diseases of Farm Animals. This course should be made to include common diseases and ailments of poultry, horses and mules, hogs, cattle, and in a slight measure, sheep. These are the common animals dealt with by farmers in North Carolina. (2) Animal Nutrition. This course should include a study of food value of different materials, utilizing home grown materials, feeding for economical production and the like. (3) Diseases, Insects, Pests. This course should approach its field from point of view of life history, hosts, manner of attack, control measures and the like. (4) Soil Management. Some of the characteristic problems of soil management were brought out in discussion of the various enterprises. This course should be made to fit such problems in an effort to conserve and improve the soil. (5) Nature and Properties of Soils. This course should show something of the formation of the soil and the relation between type of soil and crops, moisture and fertility. (6) Farm Beautification. This course should help realize an objective of the Federal Board for Vocational Education in teaching agriculture, that

is, to maintain a satisfactory farm home. No home can be satisfactory and unattractive at the same time. The course should include farm layouts, planning, selection and planting of shrubbery suitable for a farm home. (7) Farm Management. This course should show how the farm parts integrate with each other. It should also show the planning and management of the crop and animal enterprises on the farm in the way which will cause each enterprise to facilitate the other in bringing the maximum amount of returns to the farm.

This discussion of the strong and weak points of the present North Carolina curriculum completes this section of this thesis with the exception of actually setting up a desirable curriculum for Negro teachers of agriculture in North Carolina. Before setting up such a curriculum for the teachers of agriculture in North Carolina, it is desirable to show something of the agriculture of the state concerning the enterprises which are relatively constant for the state. These enterprises will be shown in some of the common types of farming in the state according to the geographical sections of the state.

An agricultural teacher in North Carolina will find the following enterprises practically constant for the state:

Percent
frequencyPercent of
counties
reporting

Corn.....	85	100
Cotton.....	54.....	80
Tobacco.....	41.....	81
Potatoes.....	94.....	100
Horses and mules.....	76.....	100
Cattle.....	57.....	100
Hogs.....	49.....	100
Poultry.....	86.....	100

Coastal SectionPiedmont SectionMountain Section

Major Enterprises: Major Enterprises: Major Enterprises:

Cotton, Potatoes Cotton, Tobacco

Hogs, Sheep,

Minor Enterprises: Minor Enterprises:

All cattle,

Hogs, Poultry,

Potatoes, Hogs,

Tobacco, Fruit,

Dairy cattle,

Poultry, Wheat,

Poultry

Truck crops

Field beans etc. Minor Enterprises:

Contributory
Enterprises:Contributory
Enterprises:

Wheat, Potatoes,

Sorghum, Cotton

Corn,

Corn, Sorghum,

Contributory
Enterprises:

Small grains,

Small grains,

Hay crops, Corn,

Hay crops

Hay crops

Field beans etc.

**Desirable Content For Agricultural Portion Of A Curriculum
For Preparation Of Negro Teachers Of Agriculture In North
Carolina. (78 hours should be required work.)**

	Credit Per Hours	Credit Per Cent	Credit Per Hours	Credit Per Cent
Courses pertaining to animal enterprises.....			25	34.2
General Poultry Problems.....	3	4.1		
Incubation and Brooding.....	3	4.1		
Hog Production.....	3	4.1		
Care and Management of Work Stock.....	3	4.1		
Dairy Herd Management.....	4	5.4		
Animal Nutrition.....	3	4.1		
Diseases of Farm Animals.....	3	4.1		
Types and Breeds of Farm Animals.....	3	4.1		
Courses pertaining to crop production.....			25	34.2
Corn production.....	4	5.4		
Tobacco.....	4	5.4		
Cotton.....	3	4.1		
Field and Forage Crops.....	3	4.1		
Potatoes.....	3	4.1		
All Small Grains.....	2	2.7		
Diseases, Insects, Pests.....	3	4.1		
Courses pertaining to other phases of agriculture.....			23	31.5
Marketing Farm Products.....	4	5.4		
Farm Machinery.....	4	5.4		
Soil Management.....	4	5.4		
Nature and Properties of Soils.....	3	4.1		
Farm Beautification.....	3	4.1		
Farm Beautification.....	5	6.8		

Suggested Electives (at least five hours required)

Field Beans and Peas.....	2
Vegetable Growing.....	2
Sheep Production.....	2
Sorghum.....	2
Farm Wood Work.....	3

T H E S I SA PLAN OF PREPARATION FOR NEGRO TEACHERS OF
AGRICULTURE IN NORTH CAROLINA

Section II

Determining The Content And Organization of The
Professional Portion Of A Curriculum For
The Preparation Of Negro Teachers Of
Agriculture In North Carolina

Scope and Meaning of This Section:

Section I of this thesis dealt with the determination of the technical agricultural content of a curriculum for the preparation of teachers of agriculture in North Carolina. The present section of this thesis will deal with a determination of the content and organization of the professional portion of a curriculum for the preparation of Negro teachers of agriculture in North Carolina.

Professional preparation, as used in this thesis, means the preparation designed for developing in the student the skills and abilities needed by a successful teacher. Professional preparation, therefore, is given thru the medium of the courses in Education and Psychology, which because of their nature, are capable of giving the student this desired knowledge.

Need For Professional Preparation By Negro Teachers Of Agriculture In North Carolina

64% of the Negro teachers of agriculture who have gone out of vocational agriculture teaching, left the field because of a lack of professional preparation.* This fact is taken from a speech by S. E. Simmons, Negro State Supervisor of Vocational Agriculture in North Carolina. The speech, on The Causes of Turn Over Among Negro Teachers of Agriculture in North Carolina, was made before a regional conference of state supervisors and teacher trainers.

It is a well known fact that a worth while program in agriculture cannot be maintained in the state until there is a possibility of stability in the teaching force which is to execute the program. This turn over of 64% of the teachers has no doubt been a serious obstacle in the way of faster advancement of the state agricultural program. The proper solution for the problem is, more general professional preparation of the teachers employed to the extent that lack of professional preparation will cease to be a major cause of turn over of the teachers in the state.

*"It might be well to add here that 64 percent of all the men who have gone out of the system entered the field without any special professional training for the job.".....
S. E. Simmons: Regional Conference of State Supervisors and Negro Teacher Trainers in Agricultural Education, 1928.
Federal Board for Vocational Education.

Portion Of The Curriculum To Devote To Professional Work

Studies on the teacher training curriculum made by different agencies, show that in practice the professional content of the curriculum is not constant..The following table gives a summary of the findings of five agencies that have studied the agriculture curriculum of Land Grant Colleges. The findings of these agencies are contained in the following table.

	Percent
Federal Board for Vocational Education	
Bulletin 13 for 1918.....	10
Federal Board for Vocational Education	
Bulletin 27 for 1919.....	14
Report 4th Regional Conference 1921 (Federal	
Board for Voc. Educ. Bulletin 94 for 1924).....	10
Report North Central Regional Conference 1922	
(Fed. Board for Voc. Educ. Bulletin 94 for 1924)...	10
Report Pacific Regional Conference 1922 (Federal	
Board for Voc. Educ. Bulletin 94 for 1924).....	15
Average.....	11.8

It will be noted that these recommendations have been made by different agencies, in different years, and in different sections of the country. They show a tendency to

be slightly out of agreement with each other. This clearly shows that curriculum organization has not yet developed into an exact science. Different authorities hold to different opinions as to the kinds and degree of specific types of training going into the curriculum. This fact is further shown in the professional requirements which have to be met by teachers in different states. These differences in the required amount of professional work, by states, are given in the following table:

State Requirements in Education and Psychology					
State	Sem. Hrs.	% of the curriculum	State	Sem. Hrs.	% of the curriculum
Alabama	24	18.1	Kentucky	15	11.3
Arizona	18	13.6	Louisiana	18	13.6
Arkansas	18	13.6	Maine	15	11.3
California	15	11.3	Maryland	23	17.4
Colorado	20	15.1	Massachusetts	13	9.8
Connecticut	18	13.6	Nebraska	15	11.3
Delaware	12	9.0	Nevada	12	9.0
Florida	21	15.9	New Hampshire	13	13.6
Georgia	12	9.0	New Jersey	12	9.0
Idaho	15	11.3	New Mexico	15	11.3
Illinois	15	11.3	New York	12	9.0
Indiana	19	14.3	North Carolina	18	13.6
Iowa	20	15.1	North Dakota	16	12.1
Kansas	18	13.6	Ohio	18	13.6
Oklahoma	16	12.1	Michigan	16	12.1
Oregon	15	11.3	Minnesota	16	12.1
Pennsylvania	18	13.6	Mississippi	18	13.6
Rhode Island	13	9.8	Missouri	18	13.6
South Carolina	18	13.6	Montana	14	10.0
South Dakota	15	11.3	Virginia	22	16.6
Tennessee	18	13.6	Washington	16	12.1
Texas	14	10.0	West Virginia	14	10.0
Utah	18	13.6	Wisconsin	18	13.6
Vermont	15	11.3	Wyoming	16	12.1

Federal Board for Vocational Education Bul. 122 for 1927

This table is modified from a table given in Federal Board Bulletin 122 for 1927. It shows the requirements in Education and Psychology for the different states, and also the computed approximate percent of the total curriculum represented by these specified hours in Education and Psychology.

In this table, the percentage column was computed by the writer. In computing the percent of the various states' curricula represented by the specified courses in Education and Psychology, the procedure was as follows. It is assumed that the number of hours in the teacher training curricula of all the states included in the table, is not radically different from the average number of hours found in the curricula of six Negro and White Land Grant Colleges in North Carolina, South Carolina and Virginia. The minimum content, in semester hours, for the six colleges mentioned is given below:

	Sem. Hours. *
N. C. Negro Land Grant College	130
N. C. White " " "	144
Va. Negro " " "	124
Va. White " " "	144
S. C. Negro " " "	122
S. C. White " " "	132
Average	132

* Computed from College Catalogs 1931-32.

sions. Out of these and similar courses the professional portion of the curriculum for the preparation of the teachers of agriculture for North Carolina, must be made.

This table is a general table, that is, it does not pertain specifically to preparation of teachers of agriculture. It is entered here, only to show the trends in the arrangement of the teacher training curriculum. As a matter of fact, all the courses included in this table may not have a place in the training program for the teacher of agriculture. In practice, a student's professional preparation, according to the table on page 89 amounts to from 12 to 24 semester hours of work. In terms of percentages, it amounts to from 9% to 18% of the training period. This makes it clear that the preparation of the student, for his duties as a teacher, cannot take in all the courses listed in the last table. If all these courses carried a minimum of only three hours credit, within the limits of the portion of the curriculum devoted to professional preparation, the student would take not more than eight of these courses.

From point of view of the teacher of agriculture, then, some of these courses cannot be considered. Among the least important of these courses to the teacher of agriculture, the following may be listed:

Introduction to Education

Educational Psychology

Principles in Secondary Education

These courses will be considered again in the evaluation of professional courses.

Evaluation Of Professional Courses

There is much difference of opinion among educators concerning the content and character of the various professional courses which are included in the professional preparation of teachers of agriculture. There is also some difference of opinion among teachers of agriculture concerning the value to them, as teachers, which these professional courses have had in meeting their teaching needs.

No individual is able to remove these differences of opinion, but an evaluation of the professional courses by the teachers of agriculture themselves, will contribute much toward a solution of the difference in regard to the value of the courses. Such an evaluation of the regard of 884 teachers of agriculture for professional courses has been made by Edwin Lee Holton of Kansas State Agricultural College. His findings are included in the table below.

This table is a combination of two tables by Mr. Holton, and is taken from Federal Board for Vocational Education Bulletin 122 for 1927. It includes the evaluation of courses taken by these 884 teachers of agriculture while they were students. The teachers included in the evaluation

have had from one to twelve years of teaching experience, so they are in position to know which of the professional courses taken have had functional value and which courses have had none.

Teachers' Evaluation of Education and Psychology Courses (Teachers of 1 to 12 years experience)											
Subject	Number of Teachers Giving Rank-value of--										
	1		2		3		4		5		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
Special methods	351	64	118	21	44	8	30	5	6	2	549
Prac. teaching	201	44	137	30	84	18	22	5	16	3	460
Tech. of teach.	142	32	138	31	93	21	54	12	20	4	447
Voc. education	87	23	115	30	99	23	47	12	36	10	384
Rural education	44	17	73	28	60	28	39	15	45	17	261
Educ. psychology	55	13	67	24	69	21	80	22	50	16	321
Adm. and mgt.	41	17	76	21	66	21	68	25	63	20	312
Gen. Psychology	59	17	69	18	87	23	90	23	74	19	379
Educ. sociology	19	14	27	20	33	24	32	24	24	18	135
Prin. of educ.	30	10	65	23	63	22	65	23	61	22	284
Tests and meas.	11	11	17	16	30	29	21	20	24	24	103
Hist. of educ.	0	0	16	6	43	17	53	20	148	57	260

Combination of tables from Fed. Board for Voc. Ed. Bul. 122.

The tables here show that teachers of agriculture have a very high regard for some of their professional courses. Those courses ranked highest are without a doubt, the courses which have had functional value to them in their work. This does not infer, however, that many of the courses receiving low ranking in this evaluation, do not have inherent function-

al value. They do. But, it is true that in some cases, the value of potentially fine courses is ruined for the students by inferior presentation of the course. Such a condition would prevent the true worth of the course from manifesting itself.

There are reasons for this too; (1) some of the professional courses are taught apparently, more for their cultural value than for their functional value. This means that the principles of subject matter are stressed rather than the application of the principles in increasing the teaching ability of the students; (2) the magnitude of the job of the teacher of agriculture has been so lately discovered that there has not been sufficient time to adjust the curriculum to the particular training needs of the teacher of agriculture; (3) until recently, the teacher of agriculture was not regarded in the same light as other types of teachers. Practically any training whatever would suffice for a teacher of agriculture. With a break in this obsolete idea, a demand for specific training adapted to the particular job of teaching agriculture has developed. This demand is as much for proper professional preparation as it is for proper technical training.

This section of the thesis proceeds with a discussion of the professional preparation of teachers, with particular reference to the needs of teachers of agriculture in North Carolina.

Limiting the Problem

It has already been stated that professional preparation takes into consideration many courses in Education and Psychology. But, while this section of the thesis will deal with the professional preparation of Negro teachers of agriculture in North Carolina, it will not deal with the whole field of professional preparation. It was stated previously in this thesis, that the writer's interest in this problem of preparation of teachers is from point of view of the teacher trainer in the Land Grant College. It was further pointed out that the duties of the teacher trainer would be entirely advisory or suggestive, in connection with all the courses which the trainees take, except in the case of the courses in Special Methods in Agriculture and the Observation and Practice Teaching. This point, therefore, forms one basis for limiting the problem. Also, the scope of the whole field of professional studies would be too large for efficient handling.

In limiting this section of the thesis to a consideration of the professional courses in Special Methods and Observation and Practice teaching, the writer follows the line of personal interest in the subject. Information gained in such a study will have special value to the writer in possible future duties as a teacher trainer in a Land Grant College.

Objectives And Aims As Determinants Of Con-
tent In The Teacher Train-
ing Program

Consideration into the professional preparation of any group of teachers involves the expression of definite aims and objectives at the outset. Eaton says, "To have and to hold to specific teaching objectives derived from the needs of the man to be taught is the first requisite to good organization of college teaching. The teacher who sees clearly what he is trying to accomplish, like the man who knows whither he is bound on a journey, is far more likely to get there than the most experienced methodician or traveler who does not. Charters also points out that a 'statement of aim is a requisite to both selection and use' of content in curriculum making and that these educational aims may be fairly stated in relatively specific terms of those to be taught." *

The aim and objectives in teaching vocational education in agriculture are clearly stated. They are stated in the purpose of the Smith Hughes Law, under which this agriculture is taught,--the aim and objectives specify that "present and prospective farmers shall be trained for proficiency in farming". This implies that a teacher who is

* Wheeler: Determining the Agricultural Constants in a Preparatory Curriculum for High School Teachers of Agriculture in Georgia. Bul. 148. Georgia State College of Agriculture, Athens, Ga.

to carry out the aim and objectives of this law, must be trained in the technical skills of farming and in the professional skills of teaching. The technical skills of farming were discussed in Section I; the professional skills of teaching are under discussion now.

In training present and prospective farmers for proficiency in farming, a teacher will have to deal with the following classes and individuals: Evening classes of settled farmers and farm women; all day classes of farm boys regularly enrolled in the school where the teacher is located; day unit classes of farm boys enrolled in other schools to which the teacher has access; part time classes of farm boys not regularly in school anywhere, yet, who are able to profit by the training which the teacher is able to give.

Obviously, all these groups with which the teacher will have to deal cannot be handled in the same rote manner. If the teacher knows only one or a few methods of teaching procedure, his efficiency as a teacher will be limited. Therefore the professional training of the teacher must be as versatile as his duties are varied. This means that the training the teacher receives should be such that he is able to handle older farmers and farm women in evening classes, regular school boys in all day classes, regular school boys in other schools in day unit classes, boys not regularly in school at all in part time classes. The efficiency of the teacher will be conditioned by the facility with which he

can handle, not one, but all these kinds of classes.

These factors, with others of comparable importance should be the foundation on which the professional preparation of the prospective teacher of agriculture is built.

The Set-up In North Carolina

At present, in North Carolina, the state program calls for vocational teaching in all the groups of individuals named in the preceeding page, that is, all-day, day-unit, evening and part-time groups. In practice, the all-day and evening classes are most frequent among the teachers of agriculture. Day-unit work is developing rather rapidly, while part-time work is not making very marked progress. It is to be admitted that day-unit and part-time work may be more difficult to manage than the other two types of work, but, in as much as these types of work are in the state program, they must be advanced as much as possible.

A Method of Determining The Kinds Of Training Needed By The Teacher Of Agriculture

Since all these types of work which the teacher of agriculture is supposed to do raise many new and perplexing problems for the teacher, and since his success as a teach-

er depends upon efficient handling of these jobs and problems, the teacher of agriculture must be given special training for these jobs and problems before he enters the field as a teacher. The responsibility for the success of the teacher is therefore, in part, transferred to the Land Grant College which prepares him.

The training needed to prepare the teacher for these jobs and problems is best indicated by an analysis of the duty of the teacher of agriculture into its jobs, problems and activities.

It is possible to determine the training needs of the teacher of agriculture on the basis of the jobs, problems and activities in the duty of the teacher of agriculture because the teacher of agriculture teaches small units of a field from day to day instead of a whole field. In fact, Vocational Education in Agriculture is not intended to be a medium of mental discipline or faculty training; instead, it is intended to promote efficiency in doing the daily jobs of life more efficiently.

In teaching, there are three levels of attainment that may be reached as follows:

1. The information level.

At this state the individual being taught knows a fact or possesses a body of information which he has memorized.

2. The appreciation level.

At this state the pupil not only knows a fact, but he rec-

ognizes the value or the importance of the fact.

3. The doing level.

At this level the pupil has acquired doing habits and thinking habits which fit him to perform intelligently the job, or the achievement, set out to be learned.*

Most forms of teaching are satisfied with the attainment of the first, or at most the first and second levels mentioned here. This is not so with training in agriculture. Agriculture takes a single job and carries it to the point where the learners gain efficiency in actually doing the job. It is not interested in the transfer of a large field of knowledge, except as this knowledge contributes to doing efficiency. Therefore, since the teacher of agriculture will be required to break his training up into the small units or jobs which the farmers and farm boys are doing from day to day, the training of the teacher must be so organized that he himself will be able to handle these same jobs efficiently.

There are further values in teaching by the farm job method. G. A. Schmidt, Associate Professor in Charge of Agricultural Education at Colorado State College, gives 10 excellent reasons for the use of the farm job as a basis for teaching agriculture. These reasons are included herein.

*Schmidt, Efficiency of Voc. Education in Agriculture.

The Farm Job Basis For Teaching Farming

1. The farm job basis permits the teaching of fundamentals, and of related and general information in close connection with a definite practical production problem in the enterprise being considered.
2. The farm job basis leads pupils to reason out problems that are real in the farm business rather than work on hypothetical cases.
3. The farm job basis provides a natural unit of work, and, hence, also a good teaching unit because natural teaching units are better than artificial ones.
4. The farm job basis teaches pupils to think in terms of problems or questions which are motivated by the pupils' knowledge of the common farm practices and also by the economic returns possible.
5. The farm job basis holds the pupils' thinking to one definite point, no chance to wander over the field of subject matter, as in the case in "topical study".
6. The farm job basis suggests a definite objective for each lesson. This objective, if based on the farm job, is vocational. The individual lessons must have vocational objectives which are well defined if the course as a whole is to have a well defined vocational objective.
7. The farm job basis helps teachers to train boys in a particular region for farming by selecting for teaching those jobs actually being performed in that region.

8. The farm job basis enables the teacher more easily properly to allot the teaching time to the various enterprises because the method of teaching will be selected for the lesson unit (farm job) instead of for the enterprise as a whole.

9. The farm job basis makes easier for the teacher the organization of the material for teaching because this basis affords normal, natural organization, based upon specific work done.

10. The farm job basis--using the job as a teaching unit--is an easier method by which to teach because the pupil with farm experience has already naturally worked with the unit. This fact gives opportunity to base the teaching upon the pupil's experience.

Analysis Of The Duty Of The Teacher Of Agriculture

On analysis, the duty of the teacher of agriculture breaks up into certain groups of related jobs, problems and activities. Roughly speaking these groups, into which the duty of the teacher of agriculture breaks, may be designated as follows: 1 Promotional Work, 2 Organizing The Course, 3 Conducting Class work, 4 Project Work, 5 Shop Work, 6 General Organization Work, 7 Club and Pupil Activities, 8 Community Work, 9 Extension Work, 10 Guidance Work, 11

Professional Work. The success of the teacher of agriculture will be dependent upon his ability to properly handle all these various groups of jobs, problems and activities. Therefore, it is necessary somewhere in the teacher training period that these groups of jobs be given careful consideration. This is usually done in the Special Methods in Teaching Agriculture Course--a course generally taught by the teacher trainer himself. Concerning these groups of jobs, the following questions come before the teacher trainer in the preparation of his course in Special Methods: (1) What is the relative ranking in importance of these groups of jobs? (2) What percent of the teaching time should be given to these groups of jobs? (3) What method or methods should be used in teaching the various jobs and problems in each of the groups of jobs?

These questions will be taken up and discussed in order, at a later time in this thesis. It is permissible to delay consideration of these questions at present because they deal with course organization and methods of teaching. At present it is more desirable to ascertain the content of the Special Methods course in which these above mentioned jobs and problems will be taught. After all, the content of the course will condition the organization of the course as well as the method of teaching it.

At the beginning, it should be said that the Special Methods Course will not be the same in content for all

states in all sections of the country. The content of the course will be conditioned by the needs of the trainees as indicated by the conditions in the state and region in which the trainees will later find work as teachers of agriculture. In spite of this necessary variation in content, the Special Methods Course in any section of the country will have some objectives in common with Special Methods Courses in other sections of the country. This is true because the agriculture teacher in any section of the country will have some duties to perform which are similar to the duties performed by teachers in other sections. Some of these constant duties are: making lesson plans, supervising projects, holding all-day classes, making a course of study, conducting field trips and the like. Many other duties which are constant to all teachers could be listed, but these suffice to illustrate the point.

After these constant duties are provided for in the Special Methods Course, then, those elements of the course which are peculiar and specific to the given locality, are incorporated.

Each teacher trainer must evaluate the job of the teachers in the section served by his Land Grant College, and on the basis of this evaluation, determine the content of the Special Methods Course. It is most important that this should be done because, when the trainee goes on a job as a new teacher of agriculture, the only information which he

will have on which to begin his duties, will be that which he has brought from the Land Grant College with him. Of course, later on he will pick up much valuable information, but, he will not be able to wait until he has had time to go thru the pick up method. It is therefore on the basis of immediacy of need of certain knowledge that these statements are made concerning the Special Methods Course.

On the basis of the duty of the teacher of agriculture in North Carolina, the writer compiles the following list of jobs which should have thorough attention in the Special Methods Course. These are some of the most important jobs which have come before the writer in his experience as a teacher of agriculture in North Carolina. The list is also supplemented by jobs which the writer has taken from other similar lists:

1. Securing a position to teach
2. Preparing to teach agriculture
3. Securing additional teaching material
4. Assembling data of boys, families, economic status, farm practices and so forth. Supervised practice must have a functional relationship to instruction, therefore these jobs are pertinent to the teaching program
5. Making first contacts
6. Making enterprise surveys, including making the blank forms to be used, emphasizing managerial problems

7. Planning and arranging the classroom
8. Organizing the library and equipment for efficient use
9. Making lesson plans
10. Making the yearly plan
11. Utilizing the resources of the school area
12. Making general rules for use in conducting the class
13. Making assignments
14. Conducting the class recitation
15. Directing and supervising study
16. Using bulletins, texts, references and the like
17. Assisting boys in organizing projects for the year
and for the complete four years
18. Selecting worth while projects
19. Helping the boys make tentative plans
20. Helping the boys make project agreements
21. Building up an interest for long time projects that fit
into common farming practices
22. Supervising the boys in search of references in carry-
ing out their plans
23. Supervision of the boys in actually carrying out the
projects
24. Supervising project records and accounts
25. Revising project plans
26. Reorganizing projects
27. Helping the boys with exhibits
28. Conducting summer activities

29. Extending agricultural education in the community
30. Conducting part-time, day-unit, and evening classes
31. Participating in community activities
32. Organizing and conducting fairs, tours, picnics and other agricultural entertainments
33. Writing news articles
34. Setting up educational exhibits
35. Noting student organizations
36. Studying general organization of the school
37. Noting school records and reports
38. Making inventories of equipment and supplies
39. Making records and reports
40. Making professional improvement while in service

Decisions That Must Be Made By The Teacher Trainer In
Organizing the Professional Portion
Of The Curriculum

- I Relative ranking of the groups of teaching jobs given on page 106.
- II Percent of teaching time to give to these different groups of jobs.
- III Method of teaching the different jobs in these groups of teaching jobs.

The preceding discussion indicated the content of the

Special Methods Course, now we are properly prepared to go into a discussion of the organization of the course. In organizing the course, there are three major problems that must be decided, these problems are indicated at the beginning of this present discussion. In seeking a solution to these problems, the writer sent nine questionnaires to Negro and White teacher trainers in the states of North Carolina, South Carolina and Virginia. These questionnaires were specifically designed to gather information on the above questions. A copy of the questionnaire sent out is included in the following pages.

Seven of these questionnaires were returned with the information checked. One of the questionnaires received did not include the information on the first two questions. All included information on the last question. This means that on questions one and two, respectively, rank of the groups of jobs, and percent of time given to groups of jobs, the results are from only six reporters, while on question three, methods of teaching the jobs, the results are from seven reporters.

Page 119 gives a composite chart of the results of the questionnaire sent out. The chart includes: (1) a list of the jobs of the teacher of agriculture, (2) the individual and average ranking of the groups of jobs by six teacher trainers, (3) the individual and average percent of time given to the groups of jobs by six teacher trainers and (4)

the method used in teaching the various jobs in each group, by seven teacher trainers.

It will be noted that the questionnaire previously referred to, asks the teacher trainers to check the methods of teaching which they think most applicable in teaching the various jobs. It is permissible to request an opinion here for two reasons, first, practice and opinion, for a given individual is likely to be practically the same thing, secondly, the statement of opinion here gives the writer a basis for determination of the best method of teaching the jobs, rather than a method which, while actually in use, might not be adapted to the service with which it is connected.

QUESTIONNAIRE

Please rank the following divisions of agricultural teaching jobs and give the approximate percentage of your teacher training course devoted to each heading.

Example: If you consider Number I, Promotional Work as being most important in your course, and you allow 10% of your course to that phase, rank as follows:

Group	Rank 1 to 10	Percent of time given
I Promotional Work.....	1	10 .

Group	Rank 1 to 10	Percent of time given
I Promotional Work.....
II Organizing the course.....
III Conducting Class work.....
IV Project Work.....
V Shop Work.....
VI General Organization Work...
VII Club and Pupil Activities...
VIII Community Work.....
IX Guidance Work.....
X Extension Work.....
XI Professional Work.....

In the columns to the right please check (✓) the method or methods you think most applicable in teaching the jobs listed. If none of these methods suit you, insert your method in the last column and check. If you think other jobs important, list them in the blank spaces provided under each heading

Method of teaching			
1	2	3	4
Classroom work	Observation	Student Practice	

I Promotional Work

1. Study records of former classes.....
2. Meet pupils' parents.....
3. Visit pupils' projects.....
4. Visit prospective students.....
5. Study types of farming in the community....
6. Write news articles.....
7. Meet students in groups during vacation....
8. Assist in home beautification.....
9. Follow-up graduates.....
10. Improve school grounds.....
11. Take pictures of the work done.....
12. Conduct public bulletin board.....
13. Cooperate with county agent.....
14. Cooperate with principal and teachers.....
15. Cooperate with school superintendent.....
- 16.
- 17.

II Organization of the Course

1. Make a community survey.....
2. Study common methods of farming in region..
3. Secure illustrative materials.....
4. Group community enterprises into a course..
5. Make an enterprise job outline.....
6. Arrange jobs in seasonal sequence.....
7. Make a job analysis.....
8. Make a horizontal layout.....
9. Make teaching layouts.....
10. Make operating sheets for exercises.....
11. File reference and illustrative materials..
12. Incorporate new practices in course.....
- 13.
- 14.

III Conducting Class Work

1. Utilize projects in class work.....
2. Conduct supervised study.....

1. Make a community shop survey.....
2. Make a shop program.....
3. Act as school carpenter.....
4. Assist students with home shop program....
5. Repair farmers' implements in school shop
6. Direct individuals in shop work.....
7. Keep record of each student's progress....
8. Set minimum standards for completion.....
- 9.
- 10.

		Method of teaching			
		1	2	3	4
		Classroom work	Observation	Student Practice	
VI General Organization Work					
1.	Make an annual program of work.....				
2.	Make a schedule of agricultural classes....				
3.	Select needed equipment.....				
4.	Order equipment.....				
5.	Arrange the classroom.....				
6.	Arrange the shop.....				
7.	Make inventory of department equipment.....				
8.					
9.					
VII Extension Work					
1.	Evening classes.....				
2.	Day unit classes.....				
3.	Part time classes.....				
4.	Supervision of projects for these classes..				
5.					
6.					
VIII Club and Pupil Activities					
1.	Have a judging team.....				
2.	Participate in State contest.....				
3.	Organize a chapter of state organization...				
4.	Hold a student fair.....				
5.	Help students exhibit products.....				
6.					
7.					
IX Community Work					
1.	Give talks before farmers on timely subjects.....				
2.	Get bulletins for free distribution.....				
3.	Help farmers with cropping plans.....				
4.	Help farmers with problems of spraying, culling, pruning, etc.....				
5.	Plan community social activities.....				
6.	Get farm papers in farm homes.....				

1	Classroom work
2	Observation
3	Student Practice
4	

1. Join State Teachers' Association.....
2. Attend all agricultural conferences.....
3. Subscribe to agricultural magazines.....
4. Read two professional books a year.....
5. Carry out a research problem.....
6. Affiliate with some church.....
7. Have regular office hours.....
8. Make all reports on time.....
- 9.
- 10.

EVALUATION OF JOBS AND ACTIVITIES OF TEACHERS OF AGRICULTURE IN
THE TEACHER TRAINING PROGRAM AS REPORTED BY TEACHER TRAINERS
FROM INDICATED STATES

[illegible]

For the purpose of making it easier to visualize the results of the questionnaire, the following summaries are extracted from the composite questionnaire chart:

Average rank given the different groups of teaching jobs by six teacher trainers

	Teacher trainers' rank	The writer's rank
1. Conducting class work	1.5	1
2. Project work.....	2.5	1
3. Organizing the course.....	3.0	2
4. Extension work.....	3.0	5
5. Shop work.....	5.0	4
6. Community work.....	5.0	5
7. Promotional work.....	5.7	3
8. Club and pupil activities.....	6.0	6
9. Professional work.....	6.0	9
10. Guidance work.....	8.0	8
11. General organization work.....	8.0	7

Average percent of time given to teaching these groups of jobs by six teacher trainers

	Teacher trainers' percent	The writer's percent
1. Conducting class work.....	21.0	25.0
2. Project work.....	16.0	25.0

	Teacher trainers' percent	The writer's percent
3. Extension work.....	9.5	5
4. Organizing the course.....	9.0	10
5. Community work.....	8.0	5
6. Shop work	8.0	10
7. Club and pupil activities	7.0	6
8. Professional work.....	6.0	2
9. Guidance work.....	5.5	2
10. Promotional work	5.0	6
11. General organization work.....	4.0	4

In connection with these summaries it is apparent that these teacher trainers have an average high regard for those jobs and activities which concern the operations of training the present and prospective farmers for proficiency in farming. The groups of jobs having most to do with these operations of transfer of training are therefore rightly given the higher rank. These are the groups of jobs which deal with Class work, Project work, Organization work, Extension work, Community work, and Shop work. On the basis of a ranking of 1 to 10, in which 1 is the highest rank, such jobs as those dealing with Promotional work, Club and pupil activities, Professional work and Guidance work, are ranked relatively low.

A close correlation is shown between the rank which

these teacher trainers gave these groups of jobs and the percent of teaching time which they allow to the same groups of jobs in the teaching program. With but slight variations, the rank and percent of teaching time allowed to the teaching of these groups of jobs by the teacher trainers, are comparable. These findings seem tenable in view of the nature of Smith Hughes Agriculture teaching and the objectives which must be realized under that law.

Yet, while the writer greatly appreciates the efforts to which these teacher trainers have gone in ranking the groups of teaching jobs and indicating the percent of the course to give to each of the groups of jobs, he takes certain exceptions to the reports as given in the questionnaire summary. These exceptions are based on a study of the duty of the Negro teacher of agriculture in North Carolina. This study is effected by the experience of the writer as a teacher of agriculture in that state. These exceptions are indicated in a separate column of the above mentioned summary, page 120.

The writer regards Conducting class work and Project work as of equal rank in the teaching program because the project is practically the backbone of the class work in a properly organized system. One could not well be separated from the other.

Organizing the course, ranks next in importance in the writer's opinion because the success of the teaching pro-

gram depends upon the fundamental organization. If the organization is properly done, the teaching will not be as difficult as otherwise.

Shop work among Negro teachers is not stressed as much as it should be, for that reason it is given a prominent position in the writer's evaluation. Many shop jobs on Negro farms go undone because of a lack of stress on this phase of the agricultural program. If shop work were stressed more in the vocational classes, many of the jobs needed around the farm home would be done.

Promotional work should be ranked next to organizing the course, in importance. It is this branch of the teacher's duty that must be depended upon to keep agriculture alive in the schools. It includes making and maintaining the proper contacts and relationships in carrying out the program in agriculture.

On a basis of 1 to 10, the writer gives Extension work and Community work a rank of 5. These phases of the work are similar in nature and purpose. They reach practically the same groups of individuals. These branches of the work carry the teacher of agriculture away from his class room to the actual homes and farms of the members of the community. They advertise, and probably do more to keep the community in favor of vocational agriculture than anything else in the program.

Club and Pupil Activities are given a rank of 6 out of

a possible 10. These phases of the work are of an internal nature in regards to the whole teaching program, that is, they are conducted within the school and therefore, do not contribute to the program in the same manner that some of the other phases of the program do.

General Organization work is given the rank of 7, because it involves a phase of the work dependent upon nothing more than the ambition and initiative of the teacher himself. If he wishes, there are few obstacles to hinder him from carrying out this part of the program. For this reason, general organization work does not require a high rank in the evaluation.

Guidance work is ranked 8th. It contributes little to the success of the program, yet it is important enough to remain a part of it.

Professional work is the last phase of the program included in this evaluation. It is given the lowest of all the ranks, 9th. This work is similar to the general organization work in being subjective on the part of the teacher. It deals with his own personal improvement, therefore, a low rank is given it in the evaluation. If the student, who is to become a teacher of agriculture, is properly selected, he will go after his professional improvement whether it does or does not carry further credit with it.

On the basis of the above explanation of the writer's

ranking of the groups of teaching jobs, the writer's distribution of teaching time is made. This distribution of teaching time is shown in the questionnaire summary on page 121. This time will not require further discussion, because it is given to these groups of jobs on the basis of the rank which the writer assigned to each group of jobs, that is, the group of jobs given the highest rank is likewise allotted the largest amount of teaching time in the teaching program.

Methods Used in Teaching Certain Jobs by Seven Teacher Trainers

In connection with the methods used in teaching certain jobs, problems and activities, the chart, page 119 shows that teacher trainers are using a variety of methods and combinations of methods in teaching. A teacher trainer may use one or all the methods listed in the questionnaire in teaching the same job. It is significant that while the classroom (lecture and recitation) is used fully in connection with all these jobs, ample opportunity is given for use of other methods as well. There are several reasons for using a variety of methods. Among the many reasons that could be used, the reason given in Federal Board for Vocational Education Bulletin 134, is as good as any to be found. "Experience has indicated that teachers are apt

to teach in the same way that they themselves were taught; and hence the methods used, not only by the teacher trainer, but also by other professors or instructors in the college, are bound to have a large influence on the practices of the teachers themselves."*

This statement is not debatable. That teacher trainers recognize it is shown by the tendency to get away as much as possible, from one vice in teaching, and that is--lecturing. In place of all classroom and lecture work, the teacher trainers are giving trainees experiences in observation and practice where the trainees can profit by such experiences.

E. B. Nelms of Oklahoma speaks strongly in favor of student practice, or participation in the training program. In the following statement he amplifies on the statement quoted from the Federal Board Bulletin. "Since supervised practice is basic in the instruction and training of farm boys, and since we believe that the job is not completely and effectively taught until it has been put into practice, it would be inconsistent to assume that any method other than participation is adequate for training teachers. Learning to teach without participation is comparable to learning to swim from a set of instructions without going into the water." #

*Report 12th Annual Southern Regional Conference, Federal Board for Vocational Education.

*Federal Board for Vocational Education Bulletin 134.

The use of a variety of methods by the teacher trainers in the training program, is a kind of insurance against the development of faulty habits of teaching in the trainees. The chart on page 119 is bound to bring out the fact that the variety of methods used by these teacher trainers is far more productive of results than any one formal method of teaching would be. A variety of methods, giving at all times preference to student participation where the student can profit by it, is the most satisfactory method of teaching the Special Methods Course.

The Observation And Practice Teaching Course

At the outset, the characteristics of an efficient training program for vocational agriculture should be given. The characteristics of an efficient program for vocational agriculture are no different from the characteristics of an efficient plan for vocational education in general. Once these characteristics are set up, they should be considered as an ideal in the matter of teacher training in vocational education in agriculture. The effectiveness of all actual programs in agriculture should then be measured against the ideal. Such a desirable ideal is found in the "Characteristics Of An Efficient Plan for Vocational Education" by Prosser and Allen. These characteristics are very compre-

hensive and are included as a part of this thesis below: They will be used in determination of a satisfactory plan for the preparation of Negro teachers of agriculture in North Carolina.

Characteristics Of An Efficient Plan In Vocational Education*

1. The training is given to those who need it, want it and are able to profit by it.
2. The instructor is himself master of the skills and knowledge he teaches.
3. The training environment is the working environment itself or a replica of the working environment.
4. The teaching content applies so directly and specifically to the occupation that it has functional value for this occupation only.
5. The content of the training which is taught is obtained from masters of the occupation, not theorists.
6. Training is given on actual jobs and not in exercises or pseudo jobs.
7. The training jobs are carried on in the same way as in the occupation itself.
8. The training needs of any group are met at the time the members of that group most require help and in the way that gives most help.

*Prosser and Allen, Vocational Educ. In A Democracy.

9. The training helps the trainee to capitalize his interests and abilities to the highest possible degree.
10. The trainee is trained specifically in the manipulative habits and thinking habits required in the occupation itself.
11. The particular characteristics of those the training serves are considered--both in methods of instruction and in personal relations with learners.
12. Adequate repetitive training experiences from the occupation fixes right habits of doing and thinking to the degree necessary for employment.
13. Training is carried to the point where it gives the trainee a productive ability with which he can secure employment or hold employment.

The Plan Of Observation and Practice Teaching Now
In Use In North Carolina

Until the year 1927-28 the North Carolina Land Grant College used a system of practice teaching under which the trainees were sent away from the college to various rural high schools to get their Observation and Practice Teaching work. This plan was discontinued after 1927-28. Various reasons were offered as to why the system was discontinued. Some of the reasons offered are worthy of some consideration: (1) To send the trainees away from the college in-

volved additional expenses on the trainees and also the college; (2) It is difficult to arrange for proper supervision of the practice teaching work; (3) The supervisor is required to travel greater distances in supervising; (4) The college program is inconvenienced when the trainees leave the grounds for an extended period; (5) There seemed a tendency on the part of the resident teachers under whom the trainees were working to turn the job completely over to the trainees.

In spite of these disadvantages, the system has certain advantages which cannot be easily overlooked: (1) The trainees gain an impression of the magnitude of the work in a natural setting. It should be remembered here that training in the proper environment is one of the points (number 3) in The Characteristics of an efficient plan in Vocational Education, quoted herein from Prosser and Allen. (2) The change from the college to the rural high school gives the trainee a freshness of point of view which is a stimulant when he returns to the college to finish his school work; (3) The trainee gets chance to apply principles learned, while there is some one available to help check potentially destructive mistakes; (4) The trainee sees possibilities in the work which no course in the college curriculum is able to bring out. Besides these advantages of sending the trainees away from the college to rural high schools for their training period, special mention should be made of the following points from Pros-

ser and Allen:

6. Training is given on actual jobs and not in exercises or pseudo jobs.
7. Training jobs are carried on in the same way as in the occupation itself.
10. The training is specifically in the manipulative habits and thinking habits required in the occupation itself.
12. Adequate repetitive training experiences from the occupation fixes right habits of doing and thinking to the degree necessary for employment.

Along with these advantages of the system of practice teaching under discussion, the very location of the Negro Land Grant College makes it necessary that this system be used. This College is located in a city of 75,000 or more inhabitants. The only high schools available in which it could conduct practice teaching, are the city high schools, which are not adapted to the teaching of agriculture on a real agricultural basis. The county rural training school is about 20 miles from the college, so it is difficult to make free use of this school for training purposes. Furthermore, there are no other rural high schools in the county in which agriculture could be taught to the extent that the schools could be used in practice teaching. These facts combine to make it impossible for the North Carolina College to successfully give the trainees practice teaching without

sending them away to the rural high schools for it. To attempt to get by under any other system would result in pseudo training for the trainees, and would rob them of the practical advantages to be derived from practice teaching. Concerning such a point as this, Schmidt of the State College of Colorado says, "For training to be most efficient, its conditions need a naturalness, a lifelikeness, a complete similarity to the problems, to the jobs, to the materials and to all of the conditions which will later surround the trainees' work."* If trainees are trained in unnatural ways, thru unnatural situations, in an environment foreign to the actual occupational environment, adjustment to actual working conditions will be difficult for them.

The case of Hampton Institute, a large private school in Virginia is worthy of consideration here. This is another school which has tried to abandon the system under which the trainees were sent away from the college for their training in practice teaching.

Hampton Institute departed from the system under discussion after the year 1926-27. The usual reasons for abandoning the system were given. But, now, it is interesting to note, that after a lapse of five years, Hampton Institute is returning to the former system. Thru the Agricultural News, a Hampton Institute Publication, the writer

*Schmidt, Efficiency of Vocational Educ. in Agriculture.

learned of the return of Hampton Institute to the former system, so a letter was sent to Mr. D. P. Fenn, Director of the School of Agriculture. The letter asked him two questions:

1. Is this the first year that Hampton has been back on the old system of sending trainees away to rural high schools for their practice teaching?
2. Why has Hampton returned to the former system of practice teaching?

A part of Mr. Fenn's letter of March 3, 1932, in answer to these questions is given below:

"This is the first year that we have sent the trainees outside the Institute since the year when you were in school and we dropped the practice. The reason for returning is that we felt, as you do, that the students would get a better chance to try out their abilities in a rural situation than they would at the Institute.

It should be said that every training institution is not so unfortunately situated for training agricultural teachers and demonstration agents as Hampton is. We do not have any real Vocational Departments or farm demonstration agent near enough to us so that students taking their practice work can spend a day in the field and get home for meals and for the night.

It should also be said that we would have returned to this system earlier if we had been able to secure the time

of an instructor who could plan the trips and who could visit the trainees while away from the Institute.

.....We appreciate the fact that working for a period in the country on an actual job away from the Institute after three years of close application in the classroom gives the senior a much greater enthusiasm for his calling and freshens him up tremendously for the last quarter's work in school."

This letter seems to point to the fact that with all the disadvantages inherent in the system, or otherwise attached to it, the system of sending the trainees away to rural high schools for their practice teaching, is the system which has possibilities of giving most desirable results. As expressed in this letter, certainly those schools so located that they do not have access to rural high schools for practice teaching, should make full use of this system. If it is not possible or desirable to give the trainees all the training needed under this system, there is still the further possibility of providing additional experiences thru other systems of practice teaching. It would be poor policy indeed to fail to use this system at all.

The map on page 24 which shows the distribution by counties of teachers of agriculture in North Carolina, shows that the North Carolina College does have several

good rural county training schools in a relatively short radius of the college. These schools could be made into good teacher training centers. The nearest of these schools is about 15 miles away. Several of them are within a hundred miles. When North Carolina's fine roads are remembered, this is not an awful long distance to travel. In connection with this particular college, it is a distinct advantage. A failure to make use of this system of practice teaching in North Carolina, means a continued transference of the college's unfavorable location to all the trainees in the form of faulty and even inferior professional preparation. While it is true that economy of the students' time and of the state's finances must ever be kept in view, such economy, if it results in a sacrifice of efficiency of the students' preparation, is false economy and should be discontinued immediately. It should not be allowed to stand in the way of the use of the system of practice teaching work which is able to give the best results under the conditions in which the college is situated.

Conclusion

(1) Special Methods and Observation and Practice Teaching, the two courses which are dealt with in this section of the thesis, are the courses in the college curriculum over which the teacher trainer has direct control and supervision. His

duties in connection with these courses are: determining and teaching those elements of subject matter which will facilitate the efficiency of trainees when they later become teachers of agriculture. (2) The Special Methods Course should include at least the minimum content included in the list on pages 109 thru 111 . Most emphasis in the course should be given to groups of jobs in the course dealing with Class work, Project work, Organizing the course, Extension work, Shop work and Community work.

In the Special Methods Course, the lecture method should be reduced as much as possible and Observation and Student Practice increased where the students are able to profit by it.

(3) Because of the unfavorable location of the North Carolina Land Grant College, the best method of Observation and Practice Teaching is the method under which the trainees are sent away from the college to rural high schools for a certain training period. In this method, results will come to the trainees which are impossible under any other system that could be used in the North Carolina Land Grant College.

Appendix "A"

Teaching emphasis on most common agricultural courses in six colleges in North Carolina, South Carolina, Virginia; in quarter hours of credits.

	A. & T. Col. of N. C. Negro	A. & M. Col. of S. C. Negro	Va. State Col. Negro	N. C. State Col. White	Clem- son Col. S. C. White	Va. Poly- Tech Inst. White
Gen. Chemistry	9	15	15	12	15	12
Org. Chemistry	10	6	5		3	
Botany	6		5	8	9	5
Bacteriology	5	4½	5			3
Zoology		15	5	8	4	7
Farm Crops	13	12	9	4	4½	5
Soils, Fert.	7	4½	7	13	8½	10
Farm Mgt.	3	4½	3	3		3
Economics	11	9	3	9	4½	6
Marketing farm products			3	3		3
Farm shop or rural eng.	6	7½	7	6	2	8
Judging animals	3	4½		4		
Vegetable growing	4	4½	3	3	4	2
Orcharding	3	4½	3	3	4	5
Types and market classes of an- imals		4½	6		5½	3
Gen. Poul. Probs.	4	4½	3	4	4	5
Incubation and brooding	6	4½	3			
Dairying	5	4½	4		4	8

Teaching emphasis (Continued)

	A. & T. Col. of N. C. Negro	A. & M. Col. of S. C. Negro	Va. State Col. Negro	N. C. State Col. White	Clem- son Col. S. C. White	Va. Poly Tech Inst. White
Veterinary science	3		9	9		3
Nutrition	3		3	5	4	2
Landscaping	4					2
Entomology	3		3	3		
Cooperative marketing			3			3
Plant diseases			3	3		5

All figures for this chart are taken from the various school catalogs for 1931-32.

Teaching emphasis on most common agricultural courses in six colleges in North Carolina, South Carolina, Virginia.*

	Dairying	Nutrition	Vet. Science
N. C. Negro	—	—	—
S. C. Negro	—	—	—
Va. Negro	—	—	—
N. C. White	—	—	—
S. C. White	—	—	—
Va. White	—	—	—
	Poultry	Incubation brooding	Types, Classes animals
N. C. Negro	—	—	—
S. C. Negro	—	—	—
Va. Negro	—	—	—
N. C. White	—	—	—
S. C. White	—	—	—
Va. White	—	—	—
	Judging An.	Orcharding	Veg. Growing
N. C. Negro	—	—	—
S. C. Negro	—	—	—
Va. Negro	—	—	—
N. C. White	—	—	—
S. C. White	—	—	—
Va. White	—	—	—
	Plant diseases	Farm Crops	Soils, Fert.
N. C. Negro	—	—	—
S. C. Negro	—	—	—
Va. Negro	—	—	—
N. C. White	—	—	—
S. C. White	—	—	—
Va. White	—	—	—
	Farm Mgt	Entomology	Bacteriology
N. C. Negro	—	—	—
S. C. Negro	—	—	—
Va. Negro	—	—	—
N. C. White	—	—	—
S. C. White	—	—	—
Va. White	—	—	—

*Scale: 1/16" equals one quarter hour of credit

Teaching emphasis (Continued)

	Zoology	Botany	Gen. Chem.
N. C. Negro	_____	_____	_____
S. C. Negro	_____	_____	_____
Va. Negro	_____	_____	_____
N. C. White	_____	_____	_____
S. C. White	_____	_____	_____
Va. White	_____	_____	_____
	Org. Chem	Landscape gardening	Farm Shop
N. C. Negro	_____	_____	_____
S. C. Negro	_____	_____	_____
Va. Negro	_____	_____	_____
N. C. White	_____	_____	_____
S. C. White	_____	_____	_____
Va. White	_____	_____	_____
	Coop. Mktng.	Economics	Marketing farm products
N. C. Negro	_____	_____	_____
S. C. Negro	_____	_____	_____
Va. Negro	_____	_____	_____
N. C. White	_____	_____	_____
S. C. White	_____	_____	_____
Va. White	_____	_____	_____

Bibliography

Agriculture of North Carolina, 15th Census of U. S. 1930

Burd, F. G., Federal Board for Vocational Education

Monograph 6

College Catalogs 1931-2

N. C. Negro Land Grant College

N. C. White " " "

S. C. Negro " " "

S. C. White " " "

Va. Negro " " "

Va. White " " "

Eaton, T. H., Federal Board For Vocational Education

Bulletin 90 for 1923

Federal Board for Vocational Education Bulletins:

13 for 1918

13 for 1930

27 for 1919

122 for 1927

134 for 1928

Federal Board for Vocational Education, 15th Annual Report

1931

Nelms, E. B., Report 12th Annual Southern Regional Confer-

ence State Supervisors and Teacher Trainers

North Carolina Farm Forecasters, Raleigh, N. C.

1926

1930

Bibliography (Continued)

Prosser and Allen, Vocational Education In A Democracy
Report 4th Regional Conference State Supervisors and Teacher Trainers 1921

Report North Central Conference State Supervisors and Teacher trainers 1922

Report Pacific Regional Conference State Supervisors and Teacher Trainers 1922

Schmidt, G. A. Efficiency of Vocational Education in Agriculture

Simmons, S. B., Report Combined Regional Conference of State Supervisors and Negro Teacher Trainers

Survey of Land Grant Colleges and Universities 1930, No. 9,
Vol. 2, Part III, page 188. U. S. D. I.

U. S. D. A. Yearbooks

1926

1930

• 1931

Wheeler, J. T., Determining the Agricultural Constants in
A Preparatory Curriculum for High School Teachers
of Agriculture in Georgia